AN HBJ PUBLICATION

April 1983/$2.00

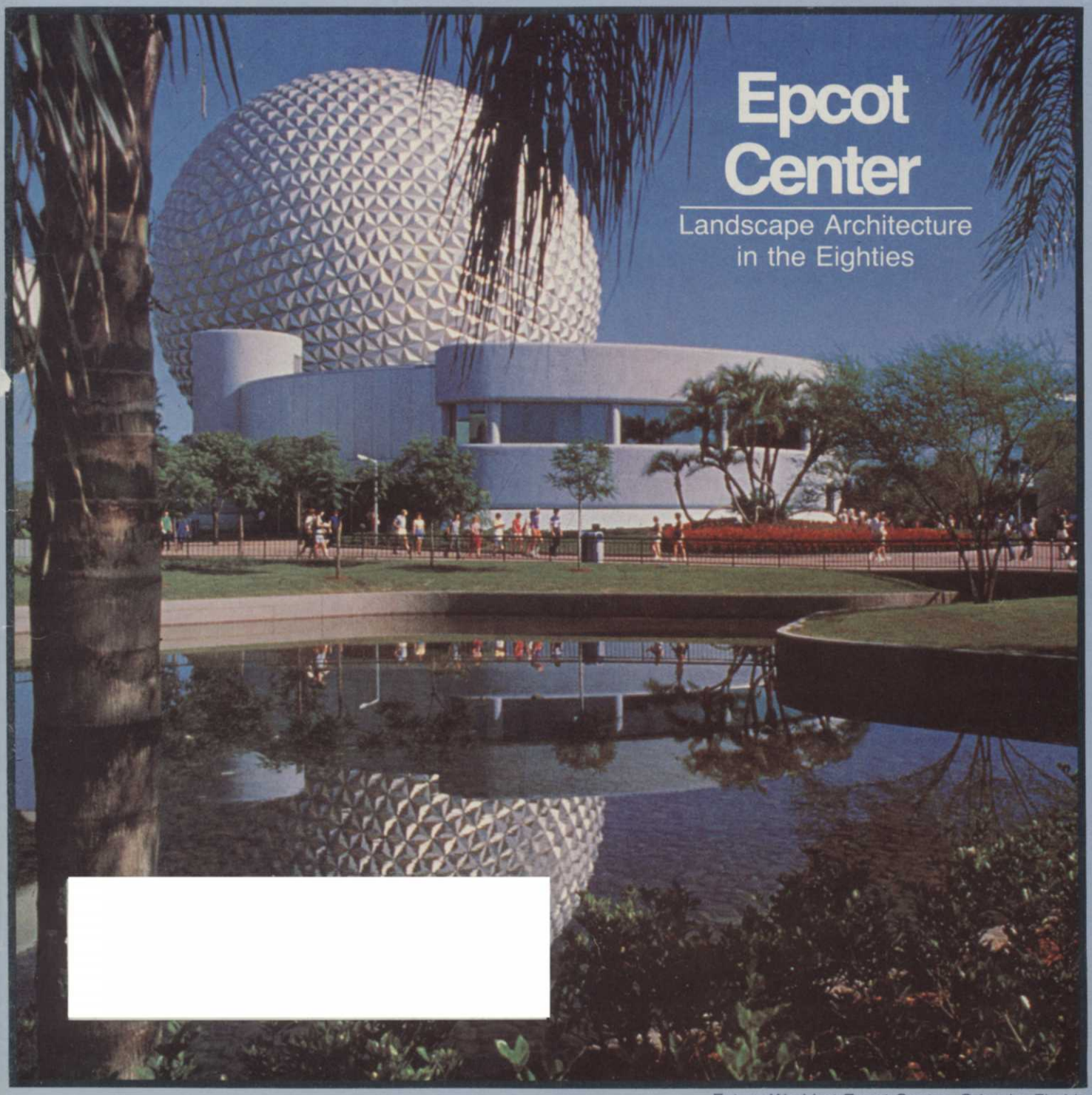
WEEDS TREES & TURF

The Journal of Landscape and Golf Course Design, Construction and Care Since 1962

Layoffs May Not Pay Off

Oakmont Makes the Most of the U.S. Open

Mid-Size, Walk-Behind Mowers Add to Efficiency



Future World at Epcot Center, Orlando, Florida

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With DURSBAN insecticide on the job, more of your calls will be for repeat and new business. While call-backs become a dusty memory.

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WT&T

Epcot Center in Orlando, FL, boasts $9 million in landscaping. The people and the plants behind Epcot Center are this month's cover story on page 24.

APRIL 1983/VOL. 22, NO. 4

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Epcot Center: The Plant Men Behind the Magic

Selecting, finding, and maintaining plants characteristic of many nations in the Florida climate is only one part of the Epcot Center story. Perhaps the largest landscape project in the U.S. this decade.

30
Making the Best of the U.S. Open

Oakmont Superintendent Paul Latshaw saw preparations for the U.S. Open as an opportunity to make changes in turfgrass and course layout. You don't have to host the Open to do what Latshaw did, but it helps.

37
Landscape Architecture in the Eighties

Landscape architects give their views on maintenance and construction contractors in this latest survey. Two unique architects, Lane Marshall and Randall Boyd Fitzgerald, tell their feelings on education, computer graphics, and the future of the landscape architect.

Layoffs cause hidden costs, see page 54.

54
Layoffs May Not Pay Off

Labor lawyer Richard Lehr describes options to laying good workers off in the winter. Both employee and employer can benefit from an adjusted salary program, especially when you consider unemployment taxes.

65
Mower Efficiency Is Challenged by Mid-Size Walkers

Distributors, manufacturers, and maintenance contractors describe a growing trend in mowing equipment, using mid-size walk-behind mowers instead of trim mowers and mid-size riders.

66
Mulching Helps Charlotte's Parks Grow

Henry Fox, operations supervisor at Charlotte, NC, Parks and Recreation Department, describes how hydraulic mulching has enabled his department to keep up with the city's growth and demand on parks.

74
Branching Out: Condo Manager Adds Outside Accounts

Mike Frenette, landscape manager of Burns Management, a property management firm in Albany, NY, uses his crews on area maintenance work to cut overhead and add to revenues.

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HBJ A HARCOURT BRACE JOVANOVICH PUBLICATION

Overseeding Oakmont Country Club

Persistence and Penneagle equal Perfection

The entire course was extensively renovated. Playing was possible even though coring, topdressing and seeding were in progress.

"We kept our entire course in play while renovating. Now, the members know the results are worth it."

Paul Latshaw

Paul Latshaw
Supt. Oakmont Country Club

Tees were verticut to soil depth and overseeded with Penneagle.

"We've been overseeding every fall since 1977. We feel that our entire course is now seventy percent Penneagle."

Fairways being aerated in preparation for seeding with Penneagle. Punch aerification provides the best combination of compaction and thatch control, soil contact seedbed, and playable fairways for the membership.

The punched plugs were ground up prior to the overseeding process.

Penneagle was also broadcast over entire fairway in addition to groove-seeding.

"Since we renovate in the fall anyway, it was easy to overseed with Penneagle creeping bentgrass."

View from the clubhouse shows the combination ninth and practice green after extensive renovation. The fairway had just been aerated.

Penneagle mowed at 5/64 inch keeps greens consistently fast. Penneagle is the creeping bentgrass that performs.

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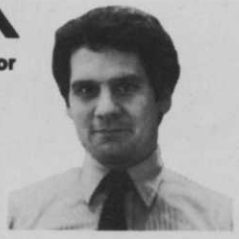
OUTLOOK

By Bruce F. Shank, Executive Editor



Sports turf . . . dollars and 'sense'

The fraternity of sports turf managers is a large one, more than 8,000 *Weeds Trees & Turf* readers by our count, and we're sure they watched with interest the inaugural games of the fledgling United States Football League last month.

They may feel the turf managers of professional stadia have it easy. The big budgets, the help from consultants, and the prestige. In fact, the managers of professional stadia are facing a case of intense use similar to schools and parks countrywide. Whether you are responsible for the softball diamonds of a small park or the Rose Bowl, you have to feel for a guy like Steve Wightman, manager of Mile High Stadium in Denver, home of the new Denver Gold entry to the USFL and a minor league baseball team.

Wightman told us last month, "In some cases we will have only a few hours to prepare the field between teams, not the seven days we really could use to get the field back in shape for the discerning eyes of television viewers."

Wightman's challenge is characteristic of all athletic fields in this country . . . intense use and the natural limitations of turfgrass. Increasing demand on baseball and soccer fields in parks and schools, two or three professional teams playing in one stadium at the same time, and even rock concerts have athletic turf managers concerned. How far can we push our turf?

All this comes at a time when natural turfgrass is making a comeback against artificial turf. Players want natural fields, so much so the National Football League Players Association included them in their list of demands during their strike. Injury rates have proven higher on artificial turf and players realize they are only as wealthy as they are healthy.

"It's really a case of economics," says Wightman. "Professional football can sell 75,000 tickets for each of 10 games and professional baseball can sell 25,000 tickets for each of 80 games. A stadium owner has a business to run. Even parks rely more on the fees of leagues playing on their fields for maintenance. At some point, both the stadium owner and the park board will have to deal with the limitations of natural turf."

"Municipalities and stadium owners are hard pressed due to the diversity of sports today," says Dr. William Daniel, professor of turfgrass science at Purdue University. "Soccer has caught on and is forcing cities to take athletic field care more seriously. Volunteers and sports league officials often lack the expertise to properly maintain the fields."

For Wightman, the real test comes when television cameras broadcast his field across the country, similar to the test golf course superintendents face when hosting a televised tournament. He can only do so much to overcome the beating the turf takes from intense use and weather.

Clearly, the increasing demand on sports fields has to be addressed by everyone involved, not just the athletic field manager.

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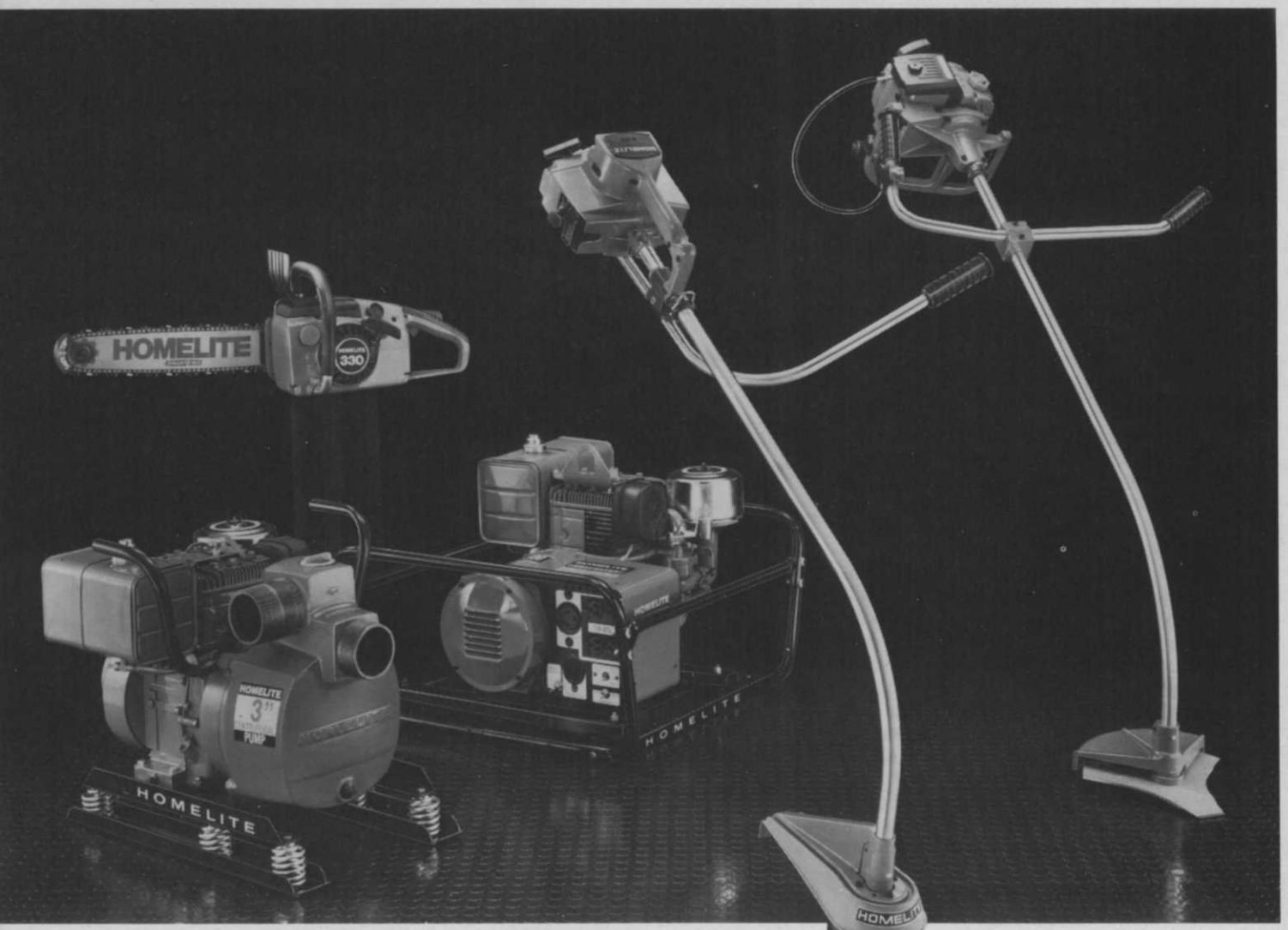

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GREEN INDUSTRY NEWS

Atlanta, speakers made golf show pop

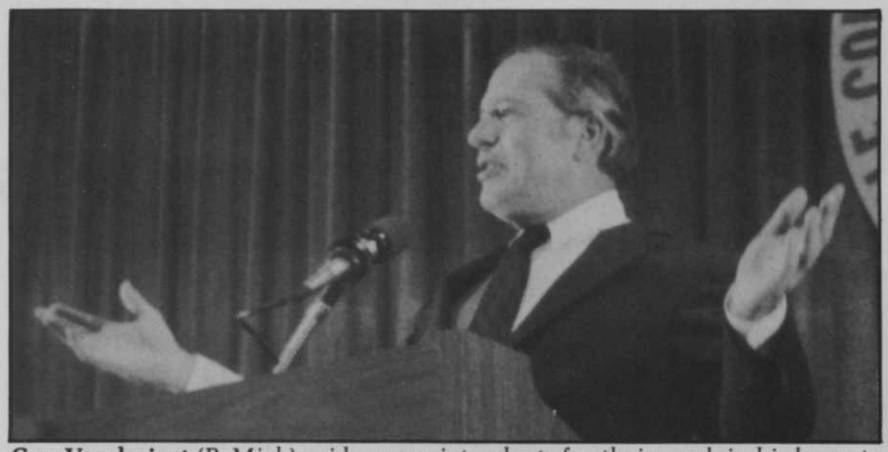
The attraction of the Sunbelt, a beefed up education program, and an impressive list of speaking dignitaries made the 54th International Turfgrass Conference and Trade Show pop in Atlanta, GA, in February.

Michigan Congressman Guy Vanderjagt brought his Republican Convention keynote ability to the show on the first day. Vanderjagt said the profession of golf course superintendent and the sport of golf are very "American" due to their individualism and naturalism. "You were ecologists before anyone knew the meaning of the word," said Vanderjagt.

Jim Prusa, director of education for the Golf Course Superintendents Association of America, said seminars were well-attended, especially "Computers and Golf Course Management." Lawn care sessions, however, suffered from poor attendance.

Nearly 60 new exhibitors faced superintendents on the show floor. Exhibitors were pleased with the activity at their booths.

Dissension expressed prior to the show by some members did not surface and members passed a $40 dues increase to support the association's plans for the coming year.



Guy Vanderjagt *(R-Mich) prides superintendents for their work in his keynote address.*

Robert Osterman of Aspetuck Golf Club in Easton, CN, was elected president. James Timmerman of Orchard Country Club in W. Bloomfield, MI, beat Paul Boizelle of Fiddler's Elbow in Far Hills, NJ for the vice presidency. For the past three years the vice president has come from the same state as the keynote speaker. Perhaps New Jersey Senator and basketball star Bill Bradley will be next year's keynoter in Las Vegas.

Other dignitaries at the show included golf professional Arnold Palmer, who received the first Old Tom Morris Award, and publisher Herb Graffis. Atlanta Mayor Andrew Young welcomed the opening session.

Peter Loft

SEED

Seedsman Loft loses fight for life

Peter Loft, president of Loft Seed Inc., Bound Brook, NJ, died in February after a long struggle with a brain tumor. His last appearance was during the New Jersey Turf Expo in Atlantic City in December.

Peter and his brother Jon took their father's seed brokerage house and developed it into an international seed company. Baron Kentucky bluegrass, a product of Baronbrug of the Netherlands, was promoted largely in the U.S. by Peter Loft with success. Loft was an early believer in specialty varieties for turf professionals.

Loft's illness was diagnosed more than a year ago and his brother Jon has been running the company for the past few months. Loft is survived by his wife Daphne and his four children, Andrew, Kristen, Peter, and Dana. Donations should be made to the Peter Selmer Loft Memorial Fund, Rutgers University Foundation.

Jacklin signs pact with Japanese firm

Jacklin Seed Co., Post Falls, ID, has signed a research and marketing agreement with Snow Brand Seed Co., Sapporo, Japan. The pact matches Jacklin's growing acreage with Snow Brand's market area.

Doyle Jacklin said he expects his seed growers to gain an extra 23,000 acres of production from the agreement. He also anticipates the company's sales of turf and legume seed will quadruple in the next five years and more than half will be shipped outside the country. *continued on page 12*

NOW YOU CAN CHANGE FROM FORWARD TO REVERSE WITHOUT TOUCHING THE GEARSHIFT.

It's not as impossible as it sounds. Not with the help of a manual shuttle shift.

Which is exactly what our two tractors feature.

It means you can move from forward to an equivalent reverse gear by simply disengaging the clutch, stopping the tractor, and then pulling the shuttle lever down. That's it.

Up there on the left is the L235, ideal for all grounds maintenance chores.

While hard at work down on the farm is the L275.

Both tractors have water-cooled diesel engines.

The L235 gives you 23.5 hp,* while the L275 with live rear PTO produces 27.5 hp.*

And both tractors have standard features that include rear wet disc brakes, a 3-point Category I hitch and a 7.4 gallon fuel tank.

Whether you have 2- or 4-wheel drive, power steering is up to you.

Any of the dealers in our nationwide sales and service network will certainly help you decide.

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Or for more information, write to us at Kubota Tractor Corporation, Communications Department, P.O. Box 7020, Compton, California 90224.

With products like the L235 and the L275, you'll agree we're a company that's going forwards.

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*Gross engine hp manufacturer's estimate.

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Jacobsen's versatile Turfcat II System introduces three new Jacobsen Turfcats.

Introducing the GA 180, the DW 220 and the GA 200. All come with hydrostatic drive which keeps the cutter speed independent of the ground speed. Offering single pedal forward and reverse control to eliminate clutching. All feature a two-speed transaxle and a foot operated hydraulic implement lift system for easy transport. And all give you a wide range of implements. Implements to match the job to the season. A system to match your budget.

The New GA 180

Our 18 h.p., twin-cylinder, air-cooled, gas-driven GA 180 is an easy match for your seasonal jobs. With its large 8.5 gallon tank and a separate hydraulic reservoir for cooler operation, the GA 180 is ready to go a long way and last a long time.

50" side discharge mechanical rotary
48" mechanical snow thrower
60" mechanical broom
54" plow
Grass pick-up R.O.P.S. Cab/Wiper and lights

The New DW 220

The only rotary on the market with hydraulic drive to the decks. Offering a 22 h.p. diesel engine completely ducted and screened for longer engine life. Plus hydraulic drive to the decks for less vibration and fewer alignment problems from shock or impact and easier maintenance.

60" side or rear discharge hydraulic rotaries
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60" hydraulic flail
48" hydraulic snow thrower
60" hydraulic broom
54" plow
R.O.P.S. Cab/Wiper and lights.

The New GA 200

Our twin cylinder, 20 h.p. gas driven air cooled workhorse. Featuring a completely ducted and screened cooling system and full pressure lubrication for longer engine life. All of the implements listed below are quickly mounted via a simple three pin system.

50" side discharge mechanical rotary
60" side and rear discharge mechanical rotaries
48" mechanical snow thrower
60" mechanical broom
54" plow
Grass pick-up, R.O.P.S. Cab/Wiper and lights.

The New GA 180
JACOBSEN
The New DW 220
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The New GA 200
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Jacobsen. Engineered from the ground up.
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GOLF UPDATE

U.S. leads world in courses, golfers

According to the National Golf Foundation, the United States leads the world in the number of golf courses and golfers.

There are 13,013 golf courses in the country—more than in the world combined and 17,600,000 golfers, more than in the rest of the world.

Data prepared by the National Golf Foundation lists an estimated 21,000 golf courses and 30 million golfers in the world.

As of Jan. 1, 1983, there were 13,013 golf courses and 17.6 million golfers in the United States. These figures were compiled by the NGF with the number of golfers including casual golfers who play less than 15 rounds a year.

Listed below are figures supplied to the Foundation by 14 golf associations in foreign (non-U.S.) countries, indicating the number of courses and golfers. No figures were received from Germany, Spain, Mexico and those in Africa and South America. Without these figures, the estimated number of golf courses and golfers in the world is conservative.

Country	Golf Courses		Golfers
1) United States	13,013		17,600,000
2) Great Britain (& N. Ireland)	2,035		1,128,469
3) Australia	1,324		350,000
4) Canada	1,140		—
5) Japan	1,200		10,000,000
6) Scotland	444		600,000
7) New Zealand	380		120,000
8) S. Africa	360		60,000
9) Argentina	250		—
10) Sweden	162		101,000
13) Korea	83	(incl. 58 ranges)	160,000
12) Italy	68		14,859
13 Netherlands	36		15,000
14) Switzerland	28		8,000
TOTAL	20,523		30,157,328

Oakwood's McLaren dead at 79

Malcolm E. "Mal" McLaren, 79, former golf course superintendent at Canterbury Golf Club and Oakwood Club in Cleveland, died in February.

McLaren was credited as being a pioneer in the development of turf machinery and in weed control methods and was one of the first to use sodium arsenite to counteract clover and poa annua.

He was president of the Golf Course Superintendents Association of America in 1952 and was a former president and longtime director of the Northern Ohio Chapter, GCSA.

McLaren was born in Buffalo and came to Cleveland in the early 1920s. In 1924, he was named assistant superintendent at Canterbury and eventually was promoted to the top job. McLaren stayed there until 1946 when he took a job as superintendent at Oakwood Club. He retired in 1965 and began working as a turf and irrigation consultant for Lakeshore Equipment and Supply Co. in Elyria, OH, until he suffered a series of strokes.

He is survived by his wife, Margaret.

NEWS *from page 8*

INDUSTRY

RIS Irrigation opens Florida facility

The RIS Irrigation Systems has opened a new manufacturing facility in Sanford, FL, its first in the East Coast, according to Tom Kimmell, vice president of marketing.

The 14,000 square feet facility will initially manufacture various types of irrigation tubing for shipment west of the Rockies, including the principal

New RIS facility.

RIS sales centers of Texas, Florida, Michigan and the Carribean.

"The Newly-completed plant is an integral part of our long-range growth plans which have also included recent expansion of RIS' El Cajon, CA, headquarters," Kimmel explained.

Kimmell said that the Sanford operation will also serve as an RIS Eastern dealer service center. There will be both technical and sales representatives to help meet dealers' needs. Phil LeBlanc will be the regional manager.

"This will enable us to ensure the most efficient possible service," Kimmel added. "Both RIS products and technical expertise will be readily available to our more than 80 eastern dealers."

LANDSCAPE

Laatsch tapped for CLIC presidency

Neville Laatsch of Valley Crest Landscape Inc., San Diego Division, has been elected 1983 president of the California Landscape & Irrigation Council Inc.

Laatsch succeeds Barry Mohon of Imperial Landscape Co., Brea, the 1982 president.

Officers elected to the council's new board of directors include president-elect Roland Tittle of Habco Land-

continued on page 16

NEW FORD LOAD HANDLERS!

SKID-STEER MANEUVERABILITY IN TIGHT QUARTERS

Meet the new name in compact loaders—the Load Handlers from Ford! Five all-new Ford loaders with the power, capacity and operating ease you're looking for!*

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There's a size for every job, from the nimble 18-hp CL-25 to the 62-hp CL-65. Lift up to 2,000 pounds. All available with husky liquid-cooled diesel engines. The two smaller models also offer gasoline engines.

See the new Ford Load Handlers soon at your Ford Tractor dealer. He's listed in the Yellow Pages under "Contractors' Equipment & Supplies" and/or "Tractor Dealers."

*CL-35 not shown, available mid-1983.

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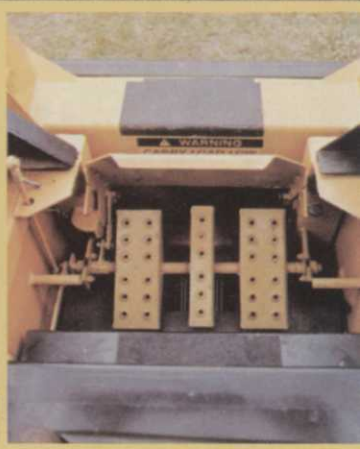
Swing-out rear door opens for easy servicing access.



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PROFESSIONAL QUALITY

Groundskeeper George Toma says:

"Look for the Trimec Seal when you select a designated hitter for your turf program."

"The key to efficiency in turf management is to select specific tools for specific jobs, so you can do it right the first time. That's why the Trimec people make a specific complex for use in specific situations. That's why I use Trimec. I call it my designated hitter that bats 1000."

George P. Toma

George Toma is a turf grass consultant. He is groundskeeper for the Kansas City Royals and the Chiefs, and has been in charge of preparing the playing fields for all 17 Super Bowls and Pro Bowls that have been played to date.

As a turf professional you probably agree with your peers that acre for acre and dollar for dollar, Trimec turf herbicide is unsurpassed in effectiveness and efficiency. But perhaps you don't realize that Trimec is being constantly improved through the development of new complexes for use in specialized situations... Designated Hitters to help you increase your efficiency.

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The control of weeds like *Spurge* and *Oxalis*, and other tough weeds that have hardened off during hot weather.

Answer:
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The control of Red Cedar, Brambles, Multiflora Rose, Thistle, Oak, Kudzu, Poison Ivy, Poison Oak and many other hard-to-kill species of brush, without harming desirable grasses.

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The control of broadleaf weeds with a herbicide that can be applied with liquid fertilizer.

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Trimec Lawn Applicator Formula. This Trimec complex is especially designed to be used with large quantities of water.

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Answer:
Select a brand that displays the Trimec seal on the bag. Only Trimec makes an herbicide that is specifically designed for granular weed and feed.

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The control of broadleaf weeds in turf.

Answer:
The one and only Trimec. Select Trimec Broadleaf for cool season grasses, and Trimec Bentgrass Formula for 2,4-D sensitive grasses.

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LANDSCAPE UPDATE

IPA purchases conference rights

The Interior Plantscape Association has purchased all right and title to the IPA Annual Conference and Trade Show from Conference Management Corporation of Norwalk, CT. IPA and CMC had been partners in a joint venture to produce the past three IPA shows. The IPA Board of Directors made the purchase of their rights to the show a top priority for 1982. The goal was achieved through a grass roots effort. The actual purchase was accomplished with financial support from the membership, the Board and the IPA's Growers and Suppliers.

Conference Management Corporation specializes in the production and management of conferences and trade shows on a national basis. Although the IPA professional staff has always been actively involved in speaker selection and course offerings, as well as brochure development for the show, CMC has taken the responsibility of contracting with exhibitors and running the actual event from registration set up to take down. The Association will now take over those duties.

It has always been the intention of the Association to work towards purchasing the rights of this annual event.

Arizona show expanded to two days

The Arizona Landscape Contractors Association will present Gary Driggs, president of the Phoenix-based Western Savings and Loan Association as its keynote speaker at the 4th Annual Irrigation Conference and Trade Exhibit May 6 and 7 at the Ramada Inn East, Phoenix.

More than 600 are expected to attend the conference, making it the largest horticultural irrigation event of its kind in Arizona.

The expansion to a two-day format is expected to make the conference attract more Arizonans and Southern Californians.

According to Association Executive Director Dick Lambert, the expansion will allow a greater variety of exhibits to be presented, which is expected to attract a larger than ever number of irrigation contractors, landscape maintenance contractors, city employees and property management professionals.

Highlights of the show will be outdoor exhibits and demonstrations by major manufacturers of equipment including tractors, backhoes and new irrigation tools and equipment.

For more information, contact the Arizona Landscape Contractors Association at PO Box 27312, Tempe, AZ, 85282, (602) 968-8179.

Students compete in Dallas

Students from more than 20 colleges and universities made the 1983 Student Field Day the largest on record according to Debra Dennis, administrative assistant, Associated Landscape Contractors of America.

The students competed in various landscape design and construction events. Potential employers attended the competition to look for future employees.

Events included weed, disease, and insect identification; business problem solving; surveying; equipment operation and repair; irrigation design and assembly; and salesmenship.

Interior leaders look to future

More than 40 growers, suppliers, and contractors in the interior landscape market met recently to chart the course for the interior plantscape industry. The Interior Plantscape Association has just published a report of the meeting, calling it White Paper from the Leaders of the Industry.

Continued on page 102

NEWS *from page 12*

scape & Irrigation Inc., Orange, and vice presidents Dennis Buccola of Buccola Landscaping Inc., Anaheim; Lee Prichard of Industrial Turf Inc., Laguna Hills; and Art Torres of Art Torres Landscaping Inc., Encinitas.

Derryl Montague of Imperial Landscape Co. is the new secretary-treasurer.

Other directors voted to the 1983 CLIC board are Klaus Ahlers, Carlacio Landscape Inc., Placentia; John Carlson, Carlson Landscaping, Fountain Valley; and Chuck Johnson,

Neville Laatsch

California Landscape Inc., Canoga Park.

The California Landscape & Irrigation Council Inc., is a nonprofit trade association of union-affiliated landscape and irrigation contractors. Its members specialize in large-scale commercial, industrial and public works projects in Southern California.

TURF

Full Circle, Inc. acquires Merit

Full Circle, Inc., Madras, OR, has acquired exclusive production and marketing rights to Merit Kentucky Bluegrass from International Seeds, Inc., Halsey, OR, according to Full Circle Product Manager Jim Steinke.

"This is the first time we've acquired exclusive production and marketing rights to a grass," said Steinke.

O.M Scot & Sons hold the patent to the seed.

Steinke told WEEDS TREES & TURF Merit has been tested extensively and has consistently rated high in a five-year rial in New Jersey, a three year test in Ohio, in the 1972 NE-57 trials and in the National

Bluegrass Tests. Merit has provided excellent Spring Color in tests at several locations and has consistently rated high in disease resistance, including leaf and dollar spot, as well as in turf quality and color.

In Canada, Merit is marketed under the name Regent.

Full Circle is a wholly-owned subsidiary of the Senex Corp.

TURF

Musser Foundation makes appointments

Three new appointments have been made to the Musser Foundation Board. Dr. Fred Grau, president, made the appointments recently. They are: **Dr. Richard E. Schmidt,** VPI, Blacksburg, VA. Schmidt will sit on the Board of Directors and will represent the Virginia Turfgrass Council and the International Turfgrass Society. He received his Ph.D. degree at Penn State under Professor H.B. Musser.

Arthur L. Hathcok joins the MITF Board of Advisors. He has recently received his M.Sc. degree from the

Continued on page 20

The American Society of Consulting Arborists *have elected the following officers and directors for the coming year. Front row, (l to r) Arnold H. Webster, president-elect; Edwin E. Irish, Michigan, President, James E. Moore, Texas, Secretary-Treasurer; Jack R. Rogers, California, Director. Back row, (l to r) Edward F. Collings, New York, Director; Philip J. Brogan, New York, Vice-President; Larry Holkenborg, Ohio, Director; William J. Griffin, California, Immediate Past President. Not pictured are Jack Siebenthaler, Florida, Director; Dr. Spencer H. Davis, Jr., New Jersey, Executive Director. The 1983 annual meeting will be in Callaway Gardens, Pine Mountain, GA, Oct. 26-29.*

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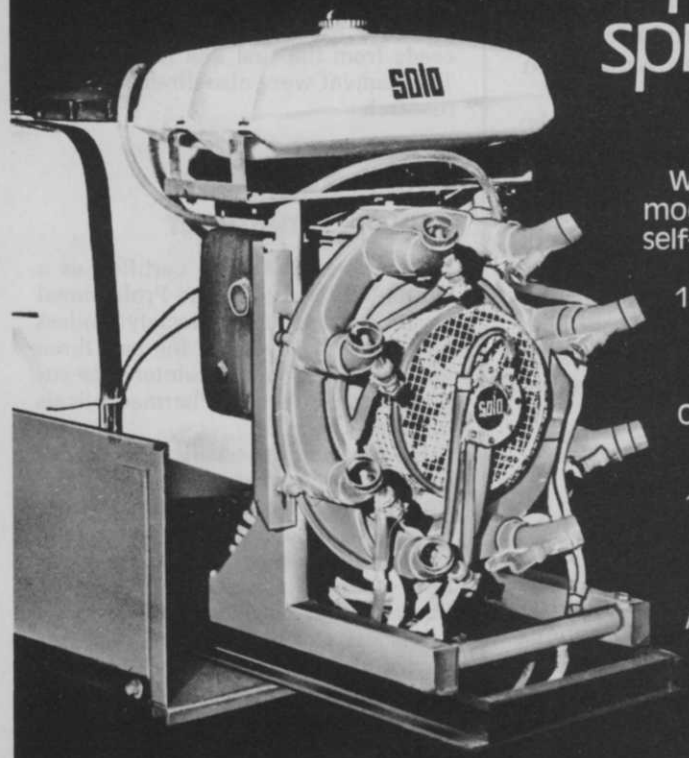

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Circle No. 151 on Reader Inquiry Card

GOVERNMENT UPDATE

EPA faces renewed criticism

The House Agriculture Subcommittee, in response to growing criticism of EPA policies under Administrator Anne Burford and Assistant Administrator Dr. John Todhunter, will likely hold pesticide oversight hearings in the next few months. In addition to issues such as handling of the toxic waste program and cancer policies, issues important to the Green Industry may be criticized, most importantly pesticide registration based upon "special local need." A number of vital products have become available through SLN registration in the past two years. Rep. Panetta (D-CA) has written to the committee saying the SLN registrations are granted without the extensive data requirements of FIFRA." Forcing states to increase data requirements for SLN registrations could seriously hamper the one program that enabled manufacturers to get needed products to users years before Federal registration can be obtained. National criticism of Burford's refusal to release Superfund documents to congressional committees and a serious case of contamination in Times Beach, MO, have fueled the fires of EPA critics.

To head off some of the criticism, EPA's Todhunter has asked the panel to reestablish the former Scientific Advisory Committee. Todhunter suggested one of the first areas for the panel to study is FIFRA, Section 3, the section concerning SLN registrations.

AAN, IPA seek Caribbean break

President Reagan's desire to encourage trade with Caribbean and Latin American countries could seriously harm growers of foliage in the states according to both the American Association of Nurserymen and the Interior Plantscape Association.

Unless nursery stock is added to a list of perishable products, imports of duty-free nursery material from the Caribbean Basin could hurt sales of state-side products. Better growing conditions, lower labor costs, and fewer regulations on growers in the Caribbean enable them to sell the same products as U.S. growers for less, especially without duties. AAN and IPA want to exempt landscape materials from duty-free status. Growers in Florida, Texas and California would be hurt the most by duty-free imports from the Caribbean. A bill favorable to the nursery industry passed the House last year, but failed to pass the Senate. The bills will be reintroduced early this year.

ASLA seeks local ordinances

In an effort to learn state and local restrictions on landscape architects, the American Society of Landscape Achitects is seeking copies of local and state ordinances. These ordinances generally involve land use planning, grading, tree programs, and landscape development. Members and non-members are encouraged to send copies of their local and state ordinances to ASLA, 1733 Connecticut Ave., NW., Washington, D.C. 20009.

NEWS *from page 19*

University of Maryland. He will represent the Maryland Turfgrass Council where he sits as a Board member. The MTC has supported the Foundation in conducting golf tournaments, the proceeds of which benefited the Foundation.

Alexander M. Radko, recently retired from the USGA Green Section as national director, will sit on the MITF Board of Advisors. He will be the 1983 recipient of the USGA green section award.

Grau commented, "These appointments will greatly strengthen MITF in its quest for answers to basic research challenges."

TURF

NYSTA supports graduate student

The New York State Turfgrass Association is supporting a soil fertility research project at Cornell University under the direction of Dr. A. Martin Petrovic by funding a graduate student for the year. Monies were donated directly from the Association and were solicited by the Association to cover the cost of the graduate student for the year. Those who contributed to NYSTA to assist with this project were the Metropolitan, Long Island, Central, Western NY and Finger Lakes Golf Course Associations, J&L Adikes, Inc. and MetroMilorganite Inc. Proceeds from the first Poa Annual Golf Tournament were also directed to this research.

Anders certified grounds manager

John Anders has been certified as a Grounds Manager by the Professional Grounds Management Society. Anders has been employed for the past three years as the grounds maintenance supervisor at Allergan Pharmaceuticals in Irvine, CA.

He received his certification certificate at the Awards Banquet at the Professional Grounds Management Society's annual conference and trade show in San Diego, CA. He is a member of the Professional Grounds Management Society. The Grounds Managers Certification Program was started in April, 1980. It was initiated to upgrade the professional and bring recognition of professionalism in the field. At the present time, approximately 51 other grounds managers are in various stages of the certification process.

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We began with 11 rugged steel blades. To let you cut as low as 3/8". And get the least visible clip of any ground driven reel. Just .58".

We made our reel diameter a mere 7". To develop more cutting force. Reduce wheel slippage. Give you smooth, no streak cutting at low heights or in wet grass conditions.

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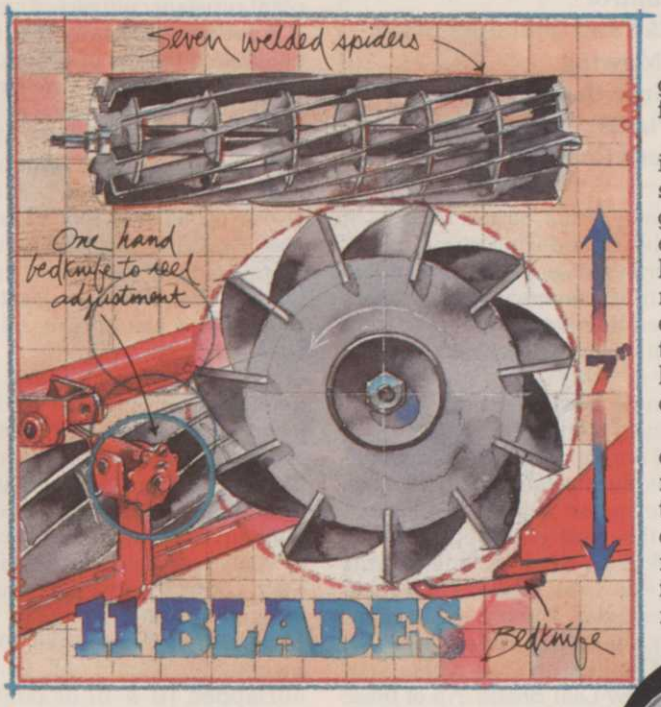

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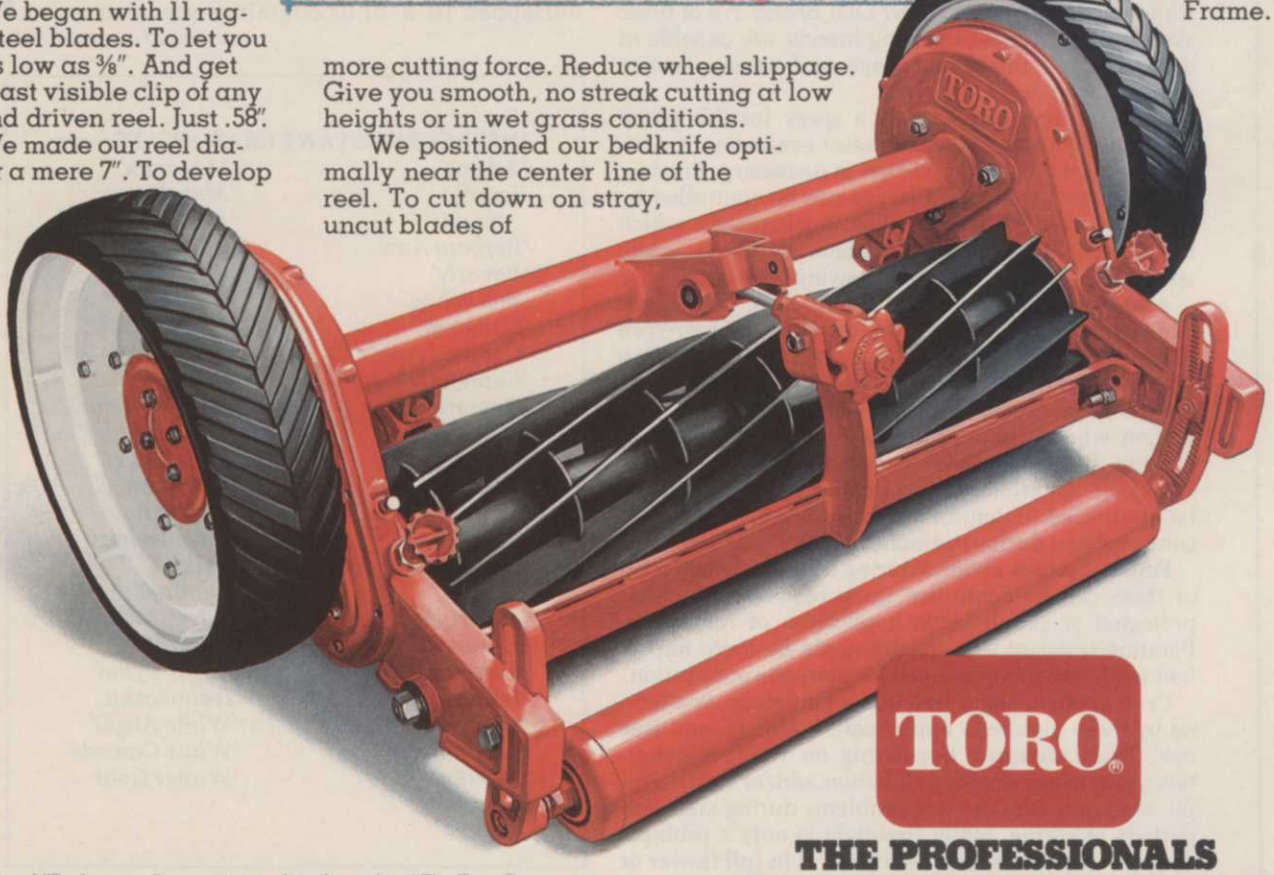

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Circle No. 153 on Reader Inquiry Card

LANDSCAPE LOG

By Douglas Chapman, horticulturist, Dow Gardens, Midland, Michigan

May Landscape Jobs
1. **Chewing Insect Control**
2. **Foliar Disease Control**
3. **Transplanting B&B and Container Stock**
4. **Begin Frequent Mowing**
5. **Start Applying Growth Retardants**
6. **Put in Bedding Plants**
7. **Start Aquatic Weed Control**

May, horticulturally, is one of the busiest months of the year. One should be considering spraying for chewing insects and various diseases; finishing late planting of trees and shrubs; commencing lawn care with earnest; planting bedding plants (that myriad of summer color); and, in southern areas, planning aquatic weed control.

May is the month of new leaves, terminal growth, and extreme vulnerability of many trees and shrubs to **chewing insect** attack. If one can protect against catastrophic insect problems during the month of May, then often the rest of the season will require little or no control. Several of the most catastrophic insect problems to attack deciduous trees include: Spring and Fall Cankerworm, Elm Leaf Beetle, Honey Locust Pod Gall, White—marked Tussock Caterpillar, Eastern Tent Caterpillar, many leaf rollers, e.g. Oak Leaf Roller, Privett Leaf Roller, or Crab Apple Leaf Roller, and Imported Willow Leaf Beetle. All of these skeletonizers, or leaf-chewing insects, are capable of devouring all the new foliage and causing major weakening of deciduous trees.

Although one could target a spray for this group during early to late May, an insect evaluation is critical to determine if application is necessary. Further, many of the Lepidoptera larvae can be controlled by biological control, e.g. *Bacillus thuringiensis*, which has little or no impact on predatorial insects, while specifically controlling these chewing insects.

Also, several conifers, or evergreens, have their chewing insect problems in May as well. Juniper Web Worm, European Pine Sawfly larvae, and Black Vine Weevil head the list of insects that either chew on the foliage or new roots. Insect surveys to determine population when pruning the trees will greatly assist in making the management decision whether to spray. But again, the effects of those catastrophic insects can be minimized, if control measures are highlighted or contemplated during the month of May.

Foliar diseases abound during May. Although most of them can be controlled quite readily with either protected or prophylactic application of fungicides. Planting resistant tree species might be more important while reducing the need for pesticide application.

Crab apple, a major tree in the landscape, is affected by three diseases - apple scab, fireblight, and frog eye. These diseases, depending on weather conditions, can cause severe defoliation and/or death. Apple scab and frog eye are problems during cool, wet periods of spring, while fireblight is only a problem during wet periods when the plant is in full flower or if pruning is practiced during active growing periods. Fireblight is a weak pathogen and, therefore, needs the entrance of a flower or wound for infection to occur. The best defense against these problems is to plant resistant cultivars of crab apples (see list).

Another important foliar disease, which almost eliminated the use of sycamore as a shade tree, is Sycamore Anthracnose. One can apply protecting sprays during mid-to-late May or plant resistant cultivars. The one readily available resistant cultivar is 'Bloodgood' London Planetree (x*Platanus hybrida (acerifolia)* 'Bloodgood'). This tree can be effective if grown on its own root system or propagated by cuttage. Graft incompatibility has been noted as a problem. Several nurseries are offering 'Bloodgood' London Planetree, propagated by cuttage on its own roots. (One example is Lake County Nursery Exchange.)

Most foliar diseases that impact trees and shrubs need cool, wet weather for infection to occur. Monitoring of the weather is paramount to make the management decision whether to apply control measures. Current landscapers and grounds superintendents should be continually reviewing plants to evaluate their environmental tolerance or disease resistance.

Many trees and shrubs can be transplanted during May. Growth is just initiating and success, because of cool, moist weather of May, is high. That success percentage should be in the 70-80% range. To improve success, one should only be **transplanting** balled and burlapped (B & B) or container grown trees and

continued on page 102

DISEASE RESISTANT CRAB APPLES

'Adams'	*'Makamik'*
Baccata 'Jackii'	*'Mary Potter'*
'Barbara Ann'	*'Mount Arbor Special'*
'Beverly'	*'Professor Sprenger'*
'Bob White'	*'Profusion'*
'Callaway'	*'Red Baron'*
'Candied Apple'	*'Red Jewel'*
'Centennial'	*'Red Splendor'*
'Centurian'	*'Red Star'*
'Coralburst'	*'Royal Ruby'*
'David'	*'Ruth Ann'*
'Dolgo'	*Sargentii*
'Donald Wyman'	*Scheideckeri*
Floribunda	*'Selkirk'*
'Golden Hornet'	*'Sentinel'*
'Henning'	*'Silver Moon'*
Hupehensis	*'Snowdrift'*
'Indian Magic'	*'Sugar Tyme'*
'Indian Summer'	*Tschonoskii*
'Jewelberry'	*'White Angel'*
'Liset'	*'White Cascade'*
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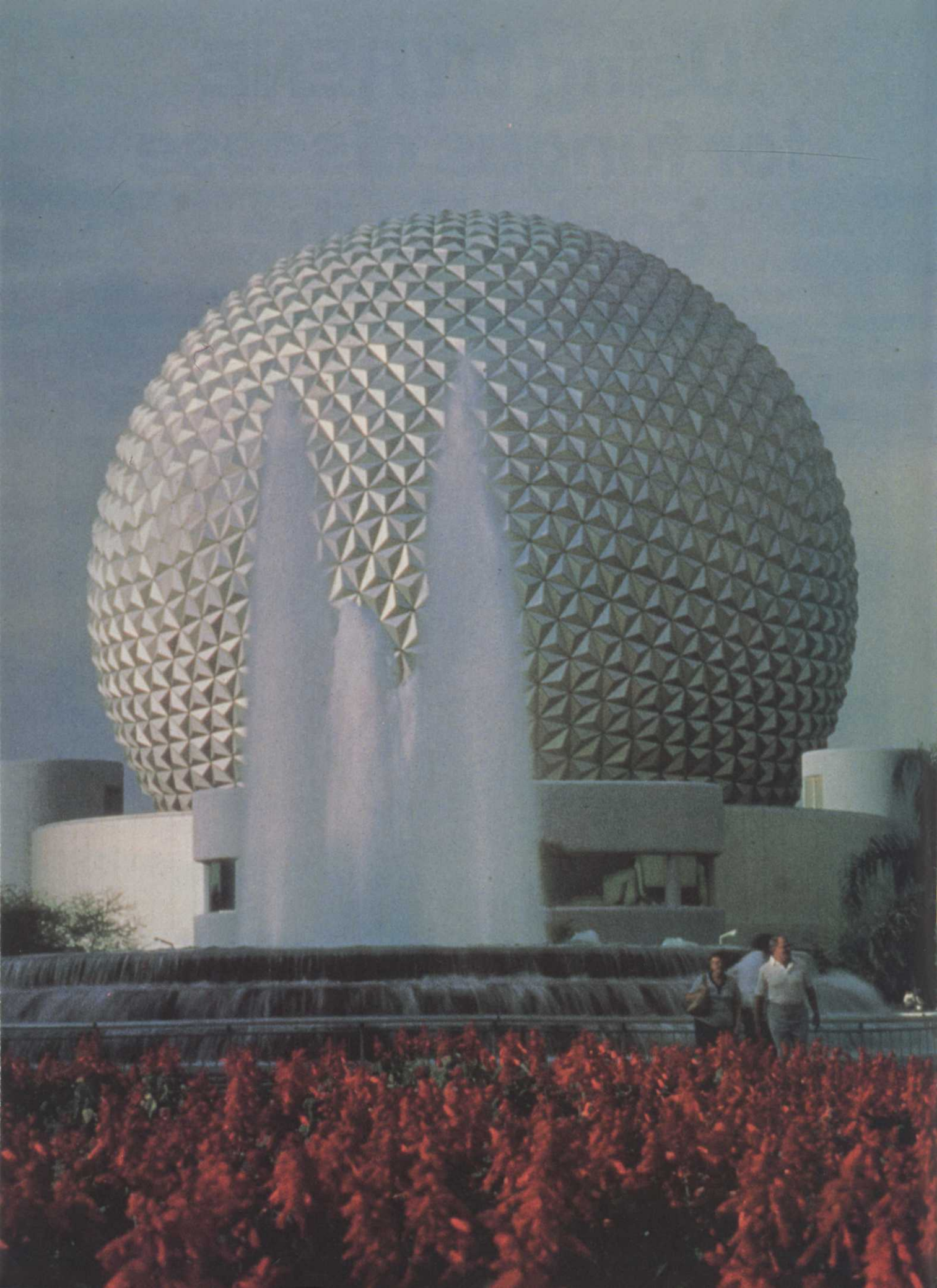
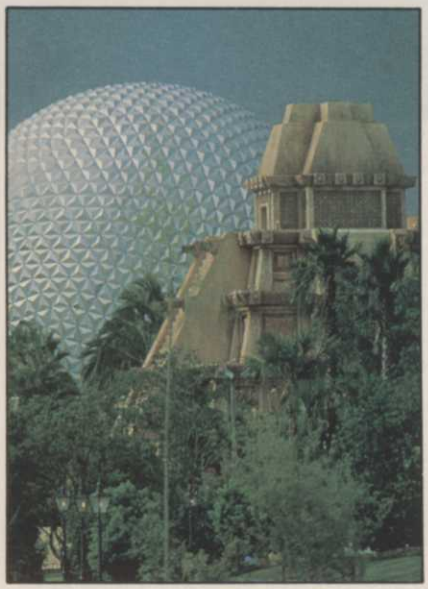


Landscaping and landscape maintenance are a vital part of the Disney Magic.

EPCOT CENTER

By GEORGE L. ZEIS

During his life, Walt Disney shocked the business world with his fearless drive in creating mammoth entertainment "lands or worlds". His followers have a new shock in the form of Epcot Center, described by its designers at Walt Disney Enterprises as a permanent World's Fair of imagination, discovery, education and exploration.



More than $1 billion has been spent in construction of the current 260-acre site in Orlando, Florida. According to plan, the site may double in size in years to come.

More than $9 million so far has been spent on landscaping; including 12,500 trees of 125 species, 200,000 shrubs of 250 species, 20 acres of emerald zoysia and Argentine bahiagrass, and more than 700,000 annuals in three acres of plant beds.

Epcot Center is divided into two parts, Future World and World Showcase.

The towering gateway to Future World is Spaceship Earth, a 180-ft. tall geosphere. Around Spaceship Earth are six pavilions sponsored by U.S. Corporations. Future World's landscaping carefully blends futuristic structures with plants.

World Showcase contains a 40-acre lagoon and eight mini-nations requiring appropriate vegetation, such as a Canadian pine grove, a German Black Forest, a Japanese garden, and the chestnut-lined Tuileries of Paris.

The people behind this massive landscape are Scott Girard, chief landscape architect for Walt Disney Enterprises, Tony Virginia, director of horticulture for Walt Disney Productions, and Pat McCarty, landscape manager for Epcot Center.

McCarty has a full-time staff of 94 managed by three superintendents; Barry McKently, Jerry Hagedorn, and Walt Pillows. The staff includes four irrigation specialists and four arborists.

Obtaining the plants for Epcot Center required a nationwide search. Eucalyptus, rare in Florida, had to be grown in a 100-acre tree farm at the site. "We used effluent water from the waste water treatment plant to water eucalyptus seedlings," said Virginia. "They grew more than one foot per month! We now have 20 varieties of eucalyptus on site, some 40 feet tall."

"Trees were relocated from all over the United States," McCarty pointed out. "The ancestors of those trees came from Europe, Mexico and the Orient. But trees adapt to their new surroundings (North America) and change shape. We had to train, prune, and reshape linden, oak and poplar trees to capture their original native land appearance."

Bill Evans, the original landscape architect for Disneyland and Disney World, said, "We play tricks with trees to get the most unusual uses out of them. We sometimes carve them into imaginative shapes to fit the needs."

Virginia acquired a 100-year-old weeping mulberry for the Chinese pavilion from New Jersey. Magnolia trees were brought in from Louisiana, crepe myrtle from South Carolina, Italian cypress from California, and many other trees and shrubs from Texas.

Vegetation had to match *that of each nation presented, such as Germany (top) and Mexico (left).*

Some trees had to be substituted. Hemlock, common in Canada, wouldn't make it in Florida, according to Virginia. "They need cold winter weather and don't like humidity." After testing, Virginia found that *Cedrus deodora,* a native Himalayan cedar which looks like hemlock, thrived in central Florida.

World Showcase, arranged around the lagoon, presents the architectural, social and cultural heritage of nine nations. In addition to the centrally located American Adventure, are the mini-nations of Canada, the United Kingdom, France, Japan, Germany, Italy, China and Mexico. The nations of Morocco, Spain, Israel, Venezuela and equatorial Africa will be added.

The trees in the Japanese and Chinese pavilions include Japanese pagoda tree, Japanese black pine, Regent scholar tree, Chinese fringe tree, flowering magnolias, and Japanese cherry trees.

Unique shaping of trees and shrubs and the careful mixtures of color are subliminal to the tourist. There are 180 laural oaks and Southern live oaks pruned to specifications. Three separate groups of sycamores are pollarded and interlaced to shapes found in France and Germany. Elms are pruned to be pancake-shaped.

Azaleas, junipers, roses, holly, jasmine, bamboo are a few of the many species artfully placed in beds or berms. Bougainvillea is selectively used around the World Showcase. There are more than 10,000 poinsettia plants on stage in the Epcot Center.

Annuals, such as violets, pansies, celosia, coleus, begonia, impatiens, petunia, marigold and others are planted out four times a year in 165 beds ranging in size from 50 square feet to 20,000.

Maintaining this vast assortment of plant material in Florida's sandy soil is also a project of Disney proportions. Nitrogen leaches rapidly from the soil and must be replaced at one-half to three-quarters lb./1,000 sq. ft. per month.

The automatic irrigation system is extremely sophisticated, operated by clocks and sensors. "It is as automatic as we could get it," says McCarty. It consists of 33 controllers, each with 24 stations, and more than 600 remote control valves. From a master display panel, maintenance personnel can identify any problem in the field, whether hydraulic or electrical.

Ground moisture is monitored by irrometers which override the controls. Programming is done at field locations. Subterranean tubing is used in guest areas so water can be applied during the day without turning on the sprinklers. Pressure sensors for each remote valve can signal a broken head or line and send a warning to the master panel and the field control.

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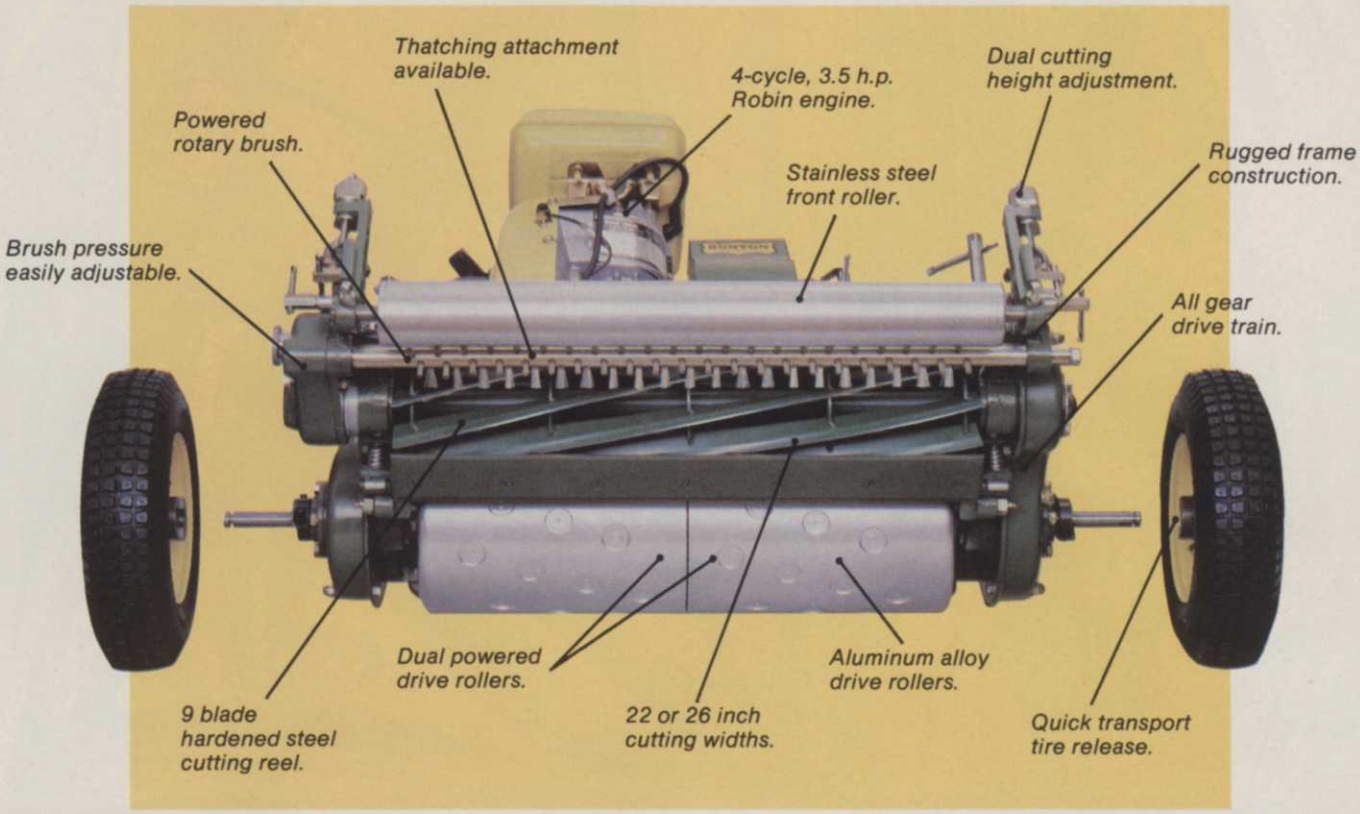

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Need another clue? D·z·n controls damaging worms including

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insects are hiding picture?

cutworms, sod webworms and armyworms. Plus it takes care of nuisance pests like ants, fleas and chiggers.

We've mentioned 8 species on the label but that's not even half.

Keep counting. And when you place your next insecticide order, ask your supplier for the biggest label in the business—D·z·n Diazinon.

PS: You'll find the answer below.

CIBA–GEIGY

Answer: D·z·n Diazinon controls all twenty-three insects seen here.

MAKING THE BEST OF THE U.S. OPEN

Preparing Oakmont for the U.S. Open gave superintendent Latshaw the opportunity to correct course flaws.

By MAUREEN HREHOCIK,
Associate Editor

Ask Paul Latshaw what a little planning, foresight and a lot of hard work can do and he'll tell you it can turn hosting the 1983 U.S. Open from a possible nightmare into a dream.

In a little more than a year, the superintendent of the 300-acre Oakmont Country Club in Oakmont, PA, has his course the way he wants it with two months to spare before thousands of golf enthusiasts converge on the course and the international television eye begins its scrutiny. Massive bunker renovation has been done, fairways restructured, a complete aerification process and an enlargement of the gallery area have also been completed.

"We studied the course in the summer of 1981 in preparation for the Open this June," Latshaw explained. "A committee was formed and we decided three major things had to be done with the course.

"First, because of the tremendous number of bunkers (about 160), many being off the tees 150 to 170 yards, we felt we were penalizing our golfers, so we took enough sand out to be able to mow around them with a five-gang mower.

"The second thing we addressed was gallery control. We have a fairly big course, but some of the holes are tight. We didn't have gallery room on the right side of hole number 1, so we decided to take the hole and move the bunker closer to the fairway so the crowd can get through."

Latshaw explained he did this "flopping" procedure on the first, second and 18th holes where the largest pedestrian traffic problems would have to be maintained. He said it gave him about 20 more yards at each hole.

To facilitate handling the gallery even more, Latshaw and his men cleared away two wooded areas and built a bridge over the gulley that linked them.

"The woods were really overpowering from the 10th green to the 11th tee. With a gallery it would be hard to get to because of the gulley. Our 10th hole is the most difficult so it would naturally be one that a lot of people would be interested in. Clearing the brush and building the bridge reduced the bottleneck. We did much the

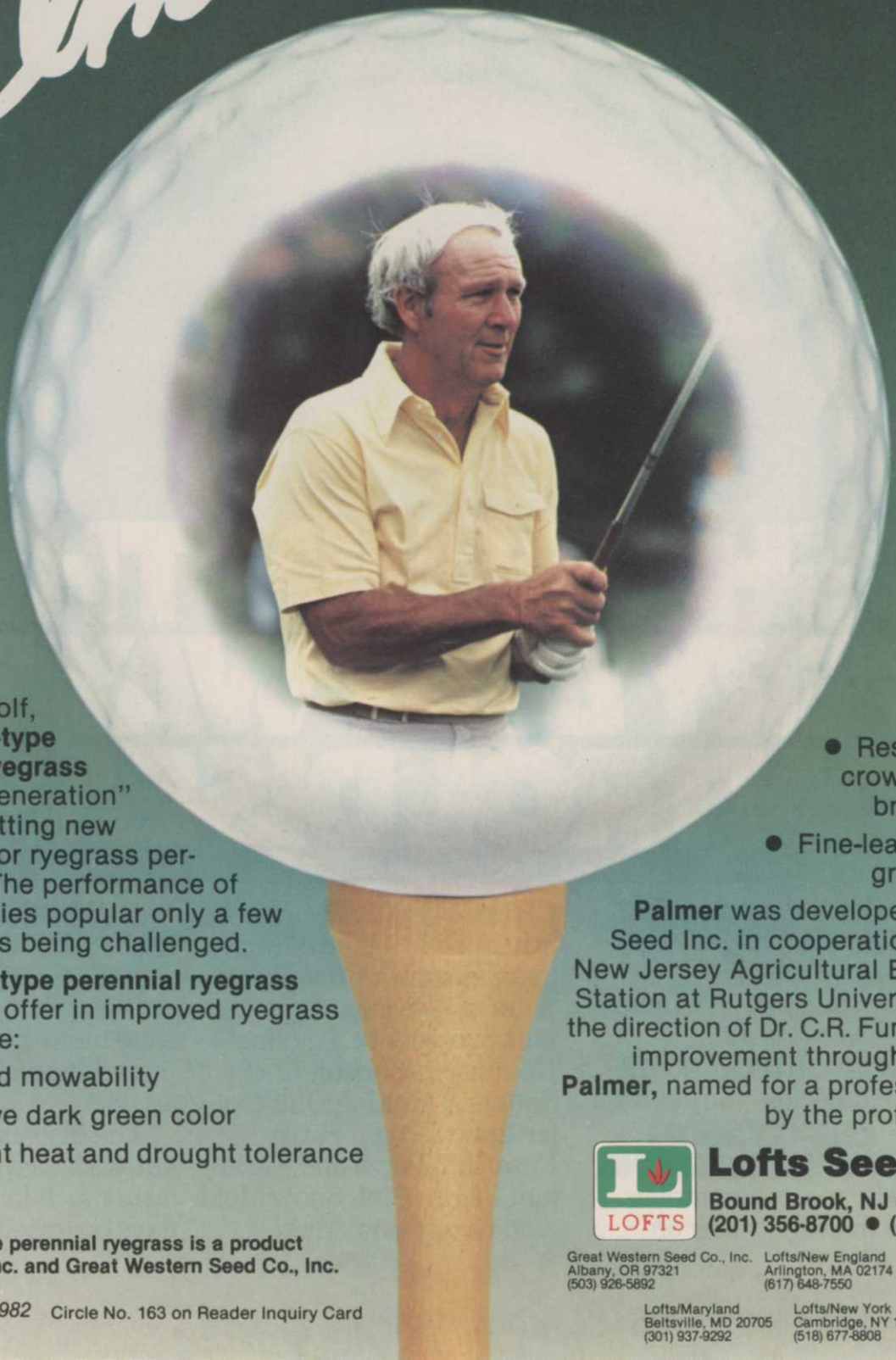
continued on page 34

Bill Rose, Paul Latshaw, and Joe Duich *(top, left to right) show their pleasure about work in progress (bottom) as members play the course.*

Palmer

Turf-Type Perennial Ryegrass

the beginning of a second legend



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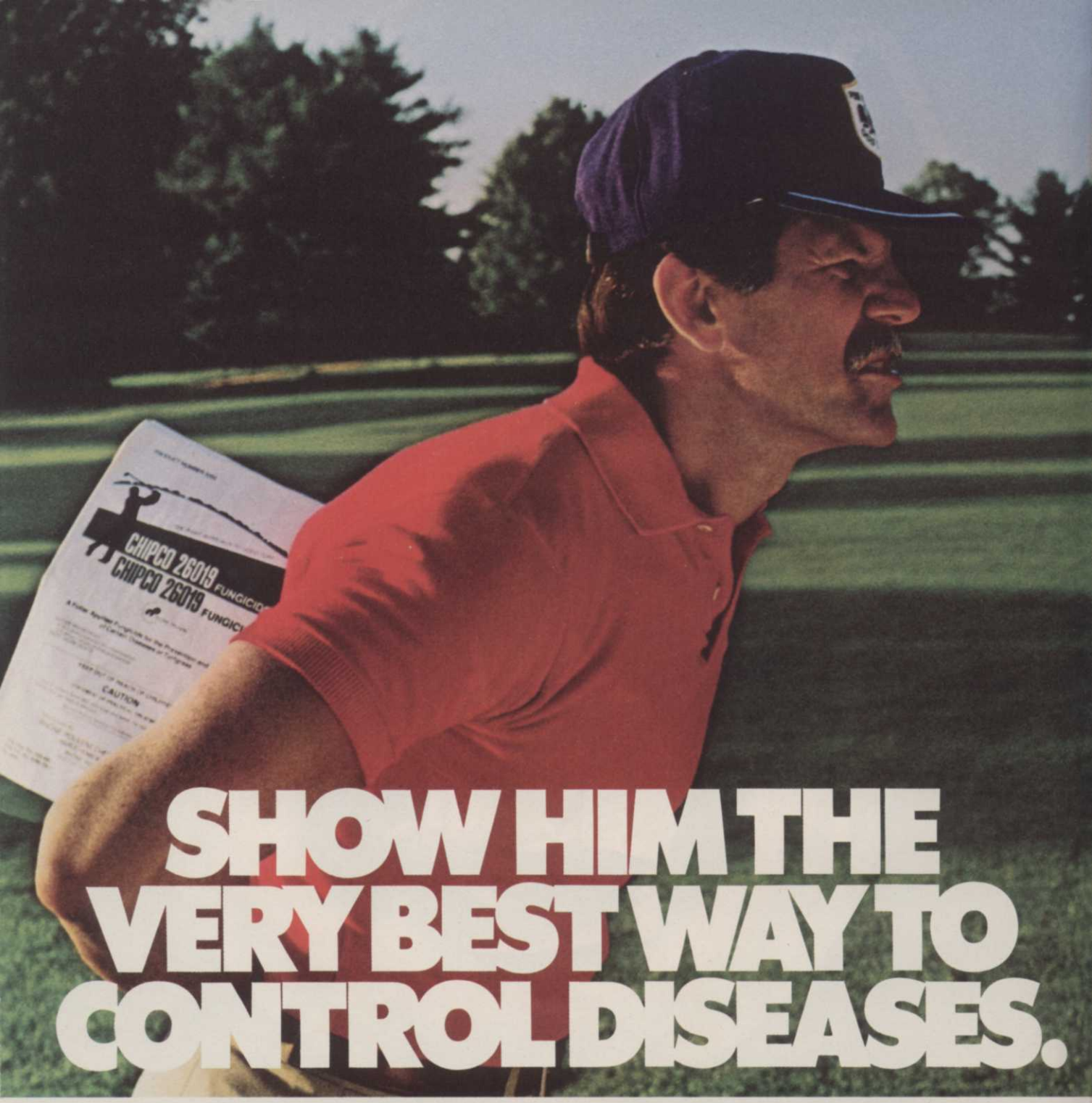

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Tees were verticut and overseeded *with Penneagle creeping bentgrass.*

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same thing on the 14th hole; we regraded the area and cleaned out the woods which gave us more gallery room."

The third concern was with the heavy Western Pennsylvania clay soil. "Some of our bunkers are so deep we had to pump water out of them. Others, we had to dig deeper," Latshaw said. "We added drainage systems to ⅓ of our bunkers.

During the renovation, which took place from the summer of '81 until December of '82, Latshaw had another challenge at the back of his mind; that of preserving the original design of the course as much as possible. Oakmont was founded in 1903 by W.C. Fownes who structured the course much like a seacoast course in Scotland, one of the reasons for all the bunkers. The sandy seacoast was even copied by having sand ditches at various places on the course.

"Those ditches make it really difficult because all of the maintenance on them has to be done by hand. It also changed the drainage patterns."

Even with the disadvantages, Latshaw replaced the original sand ditches on holes 2 and 15 to preserve the authenticity of the course.

"They provide a real good hazard," Latshaw said jokingly. "The changes have been so natural in all phases of the renovation that most members don't even know we've done them."

All of the finishing touches in the project were done by hand; in fact, Latshaw estimates that the lion's share of the work was hand done. It was a slow process. The equipment used was mainly a Ford front-end loader backhoe and a "boxscraper" mounted on a three-point hitch tractor. Because of all the excess soil coming out of the bunkers, a dump truck was used extensively. Two Jacobsen UV-4s provided the four-wheel drive needed to go down in and back out of the bunkers. A Ditch Witch dug drains. "We used a lot of rakes, shovels and back power, too," he said.

All of the work was done by Latshaw and his full-time crew of three.

"The committee was under the impression we could do it all ourselves, which, manually, we did. But I did call in Fred Garbin, a local golf course architect, for his expertise. He was a tremendous asset.

"He had a lot of patience and I can be difficult to work with at times," Latshaw joked.

Dr. Joseph Duich, Professor of Turfgrass Science at Penn State University also consulted on the seeding of the project.

"Joe and I are good friends," Latshaw said. "He's the right guy to have around on all aspects of a project like this."

In order to have the golf course in the finest condition possible for the tournament, all of the fairways were aerified with a Ryan's Greensaire.

"Normally, we use this for greens and tees, but found it had a number of advantages being used on the fairways," Latshaw said. "For one thing, it brought up lots of soil and made a good seedbed for our overseeding program. I'm a firm believer in Penneagle creeping bentgrass. It can really compete with poa annua."

continued on page 82

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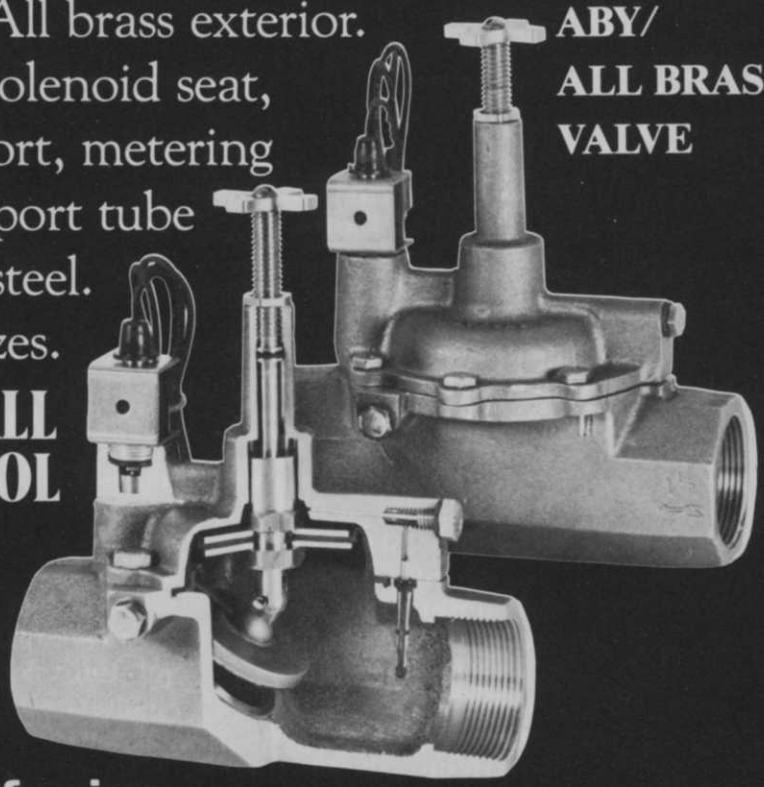

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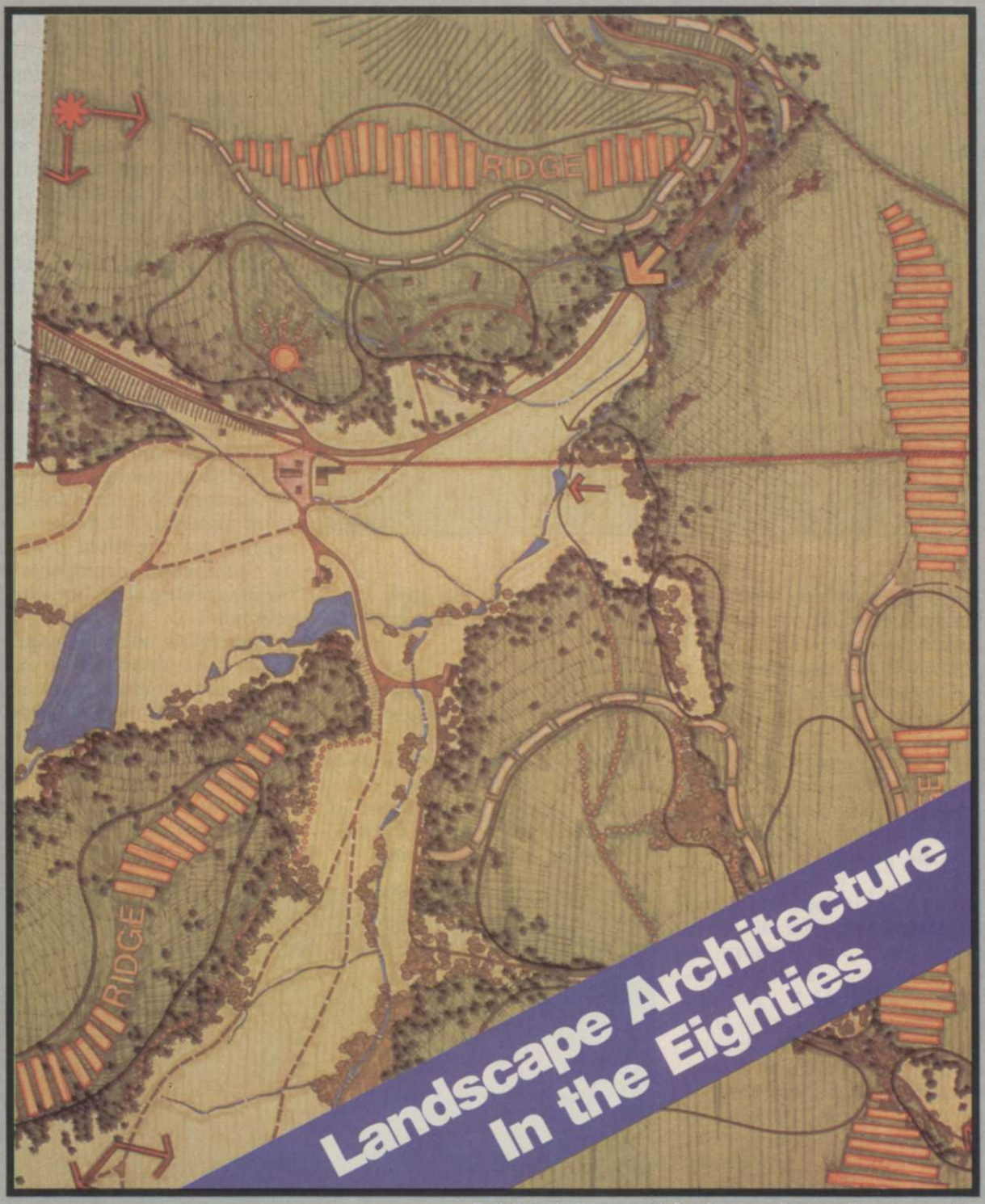
LANDSCAPE MANAGEMENT



Landscape Architecture In the Eighties

Bell Ranch Camp and Conference Center, Evergreen, CO.

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IMAGE AND MAINTENANCE

Landscape architects don't hesitate to step in on maintenance of their designs.

TABLE 1

Type of Firm

Type	Percent
Landscape Architecture Firm	*56*
Government Agency	*20*
General Architecture Firm	*11*
Landscape Contracting Firm	*8*
Multi-disciplinary, architecture, landscape, engineering, planning	*6*

The landscape architect today is very image conscious and worries most about contractors doing installation and maintenance of his design, according to the latest *Weeds Trees & Turf* market survey.

The LAs also rated use of low maintenance plant material and the growth of design/build companies to be the areas of greatest impact on the profession in the future.

Readex, an independent research company, polled 285 landscape architects in January. It found the average landscape architect to have 13.5 years of experience, works for a firm specializing in landscape architecture, and is part of a five-person staff. The primary types of design work they do, in order of responses, are commercial buildings, public properties, residential, and irrigation design. The secondary areas of concentration are interior landscape design, residential, irrigation, public properties and commercial. Golf course and highways are the areas landscape contractors are least involved.

More than 80 percent cited maintenance of their designs after installation as their biggest problem. Two thirds mentioned the reliability of contractors doing installation as a problem. One architect said this concern, plus speed of job completion, as the major force behind design/build companies.

Instability in the construction market was a distant third at 37 percent as a problem. Close behind this were competition from unlicensed designers, variety of plant material produced, size of plant material available, and quality of plant material from nurseries. Only one out of five felt the quality of landscape architecture graduates was a problem and very few were concerned about the future supply of graduates.

More than half the respondents had ten or less years of experience in the practice, an indication the field attracts a healthy number of college students.

Education and experience are by far the primary sources of information for architects in selection of plant materials for designs. Nurserymen are consulted more often by landscape architects than books, publications, or extension personnel.

Landscape architects are not hesitant to participate in maintenance of their designs through inspections and recommendations. Three fourths charge for supervision or inspection of installation and 40 percent charge for making suggestions and recommendations for maintenance. Nearly half the architects recommend contractors

TABLE 2

Level of Involvement in Following areas

Area	Great	Some	None
Commercial	49%	36%	9%
Public lands	39%	41%	13%
Highways	10%	28%	42%
Residential	37%	43%	15%
Irrigation	27%	41%	22%
Interior	6%	49%	33%
Golf	5%	26%	55%

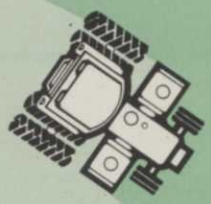


TABLE 3

Reference Sources

Own education/experience	*90%*
Nurserymen	*72%*
Journals/magazines	*56%*
Association Publications	*51%*
Extension Releases	*46%*

or references to owners of properties they have designed.

Without being asked, nearly a tenth of the architects mentioned a misperception of the LA's work as a problem. "LA firms are a prime consultant to owners rather than sub-consultants to the general architect and engineering firms," said one respondent. Another said the image problem is mainly with the mid-size projects. "A significant gap exists between the very large project where the LA's services are considered essential, and the single-family residence work designed and installed by the contractor. The vast majority of these 'between' projects never get professional design attention."

Other factors which concern LAs are the lack of standard specifications, the difficulty of keeping current, and underqualified designers. One respondent claimed, "The number of highly competitive, small contracting firms dilutes the quality of finished jobs. Owners, therefore, are dissatisfied with landscape contractors in general. Many owners are starting their own nurseries and buying plant material directly from suppliers. LAs have reduced roles and therefore reduced fees."

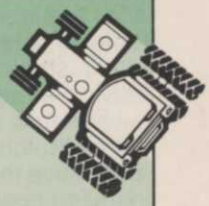
This lack of recognition for the mid-size design, the increase in design/build firms, and the poor image of small jobs seem to be encouraging landscape architects to associate themselves more with regional planning and large scale consulting. As one LA said, "The landscape architect's influence and presence is in the regional and planning scale of projects. There may be less involvement in planting plan work as a major source of income."

The future for landscape architecture appears greatly tied to computer design and drafting. Some call it computer aided design or modeling. Stored data can be ac-

TABLE 4

Biggest Problems Facing Landscape Architecture

Quality of maintenance after installation	*81%*
Reliability of contractors doing installation	*65%*
Instability of construction market	*37%*
Competition from unlicensed designers	*34%*
Variety of plant material	*34%*
Public misperception of landscape architect	*34%*
Size of plant material	*30%*
Quality of landscape architect graduates	*20%*
Price of landscape architecture services	*17%*



cessed to design jobs not unlike computer graphics in automobile or building design. Plant selection information can be more specific based upon site conditions, own-

Landscape architects are not hesitant to participate in maintenance of their designs through inspections and recommendations.

er's desires, and the latest plant resistance information.

One architect predicted a decline in government funded work, saying LAs are too dependent on that type of work.

Underneath the business of landscape architecture, the artist and the idealist in LA's express themselves with a sense of responsibility for the preservation of nature in the midst of modernization and growth. **WTT**

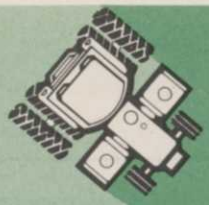


TABLE 5

Future Impact of Trends

	highly significant	significant	insignificant
Low-maintenance plants	56%	38%	4%
Drip irrigation	22%	50%	18%
Interior landscaping	27%	52%	14%
Propagation by cuttage	7%	32%	42%
Container over bare root	24%	39%	26%
LA involvement in maintenance	37%	47%	11%
Design/build firms	45%	42%	7%
Government work	30%	43%	16%

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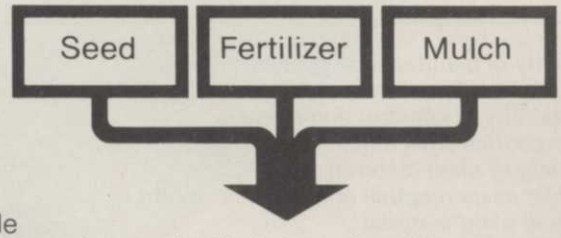

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Profiles in LANDSCAPE MANAGEMENT

PRACTITIONER TURNED EDUCATOR: LANE MARSHALL IS BULLISH ON LAs

By BRUCE F. SHANK, Executive Editor

"The landscape architect should be the one to convince owners that maintenance is vital to the value of a landscape," says Lane Marshall, head of the Department of Landscape Architecture at Texas A&M.

Marshall, former president of the American Society of Landscape Architects and practicing landscape architect in Sarasota, Florida, for 20 years, has a new perspective on his industry now that he is a university department head. His experience and understanding is apparent in a report he did for ASLA, *Landscape Architecture in the Twenty-First Century*.

"After graduating from the University of Florida in 1959, I went to work for a practicing landscape architect in Fort Lauderdale. After nine months, I struck out on my own since no licensure was required then. I started with small residential designs and worked my way up, gradually building in size and skill.

"At the same time, I recognize there is an informal apprenticeship of 2 to 3 years where the beginning LA spends much of his time at the table on smaller jobs," Marshall points out. "I understand the frustration of my students starting out. They have a unique set of ethics toward the quality of life and to living things which drives them through the tough times."

"LA graduates are excellent problem solvers and this quality goes with them into whatever field they settle on. And, for this reason, there is room for twice as many LA graduates as American colleges and universities produce," Marshall claims. He points out there are 44 schools accredited by ASLA, perhaps 100 with LA curricula. "Out of these, there are at least a dozen superb programs for aspiring landscape architects."

Marshall's life swung toward education as he travelled the country in 1977-78 as president of ASLA. "After 500,000 miles, I simply couldn't go back to private practice. Instead, I attended the University of Illinois and received a Masters in Landscape Architecture in 1979." In 1980, he and William H. Behnke, a landscape architect in Cleveland, Ohio, joined forces in Florida. But within the year, the lure of education and a department head offer from Texas A&M drew him back.

Marshall still consults with Behnke and his former clients when possible. It would be like letting down a friend otherwise as he describes it.

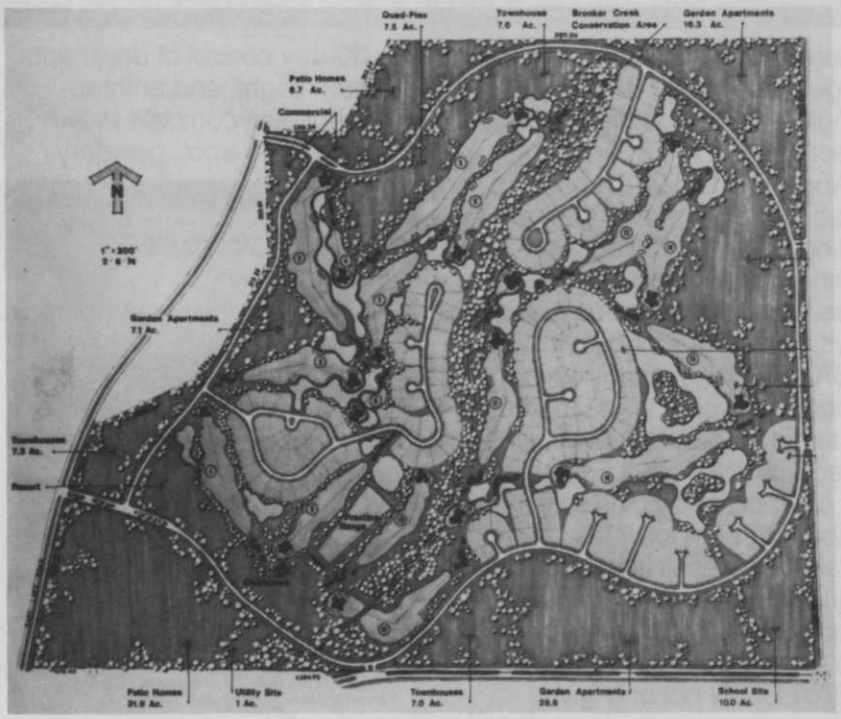
Since 1956 when he was a student, Marshall has been active in ASLA. He became a full member in 1964 and later served on a committee to establish selection criteria for an executive director. The result of his work was the hiring of current executive director Ed Able in 1977, months before Marshall became president, ASLA's growth has been a tribute to Able and to Marshall's committee.

Marshall sees a need for a second level of certification in the field to prove to clients that LAs are staying current. He openly suggests his students go to states without licensure to gain experience. However, he sees self-policing as the key to success in certification. "In many states, it is licensure that publicly states the landscape architect is as professional as an architect."

The ASLA Board of Trustees has endorsed a nation-wide continuing education program tied to seminars and other educational methods of keeping up-to-date. Marshall says it will take 3 to 5

continued on page 46

Tarpon Woods Golf and Tennis Club *was a master plan done by Marshall prior to teaching. The plan includes landscape planning for garden apartments, townhouses, a resort and the golf course.*



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MARSHALL *from page 44*

Lane L. Marshall

years to get the program off the ground.

"We need to establish a program similar to the CPA in public accounting, where the initials mean as much as any law. A landscape architect in the ASLA program might wait five years after graduating to begin the continuing education program.

"The time to show clients the value of maintenance is up front," Marshall exclaims." If four or five of your jobs go sour because of poor maintenance, you'll get the motivation to sell clients on maintenance."

In many cases, Marshall actually wrote a three-year maintenance contract into his bid to make sure his jobs were properly maintained. He wrote a maintenance manual and gave it to nearly all his clients, although the cost for this he built into their fee.

"Maintenance contractors, not installation contractors, are the major reason for the poor taste many architects have about contractors. At the most, one out of ten installation contractors would disappoint me." On the other hand, he had a hard time finding a reliable maintenance contractor. He is pleased that many landscape contractors are developing maintenance divisions today.

"In the future, the landscape architect should do more thinking and less drawing," Marshall states. "The resistance to computers should be dispelled and the full capabilities of computers in landscape architecture recognized."

Still, Marshall believes the computer age will not take away from the LA's interest in landscape problems." I don't see LAs shifting away from site and plant challenges because of computers."

"I have a very positive attitude about design/build," Marshall said. If you look at some of the work of Theodore Brickman of Chicago or Lambert's in Dallas, you see what I mean. Their work meets any standards for LAs."

Marshall believes there is a greater role for women in landscape architecture. "Women have the natural intuitiveness and sensitivity many men lack. They have no problem competing with men. The problem, like in any profession, might be lack of longevity caused by a husband's move or motherhood. Landscape architecture is a super profession for women." **WTT**

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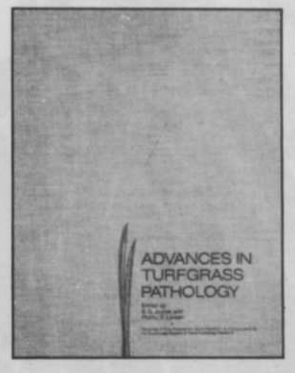

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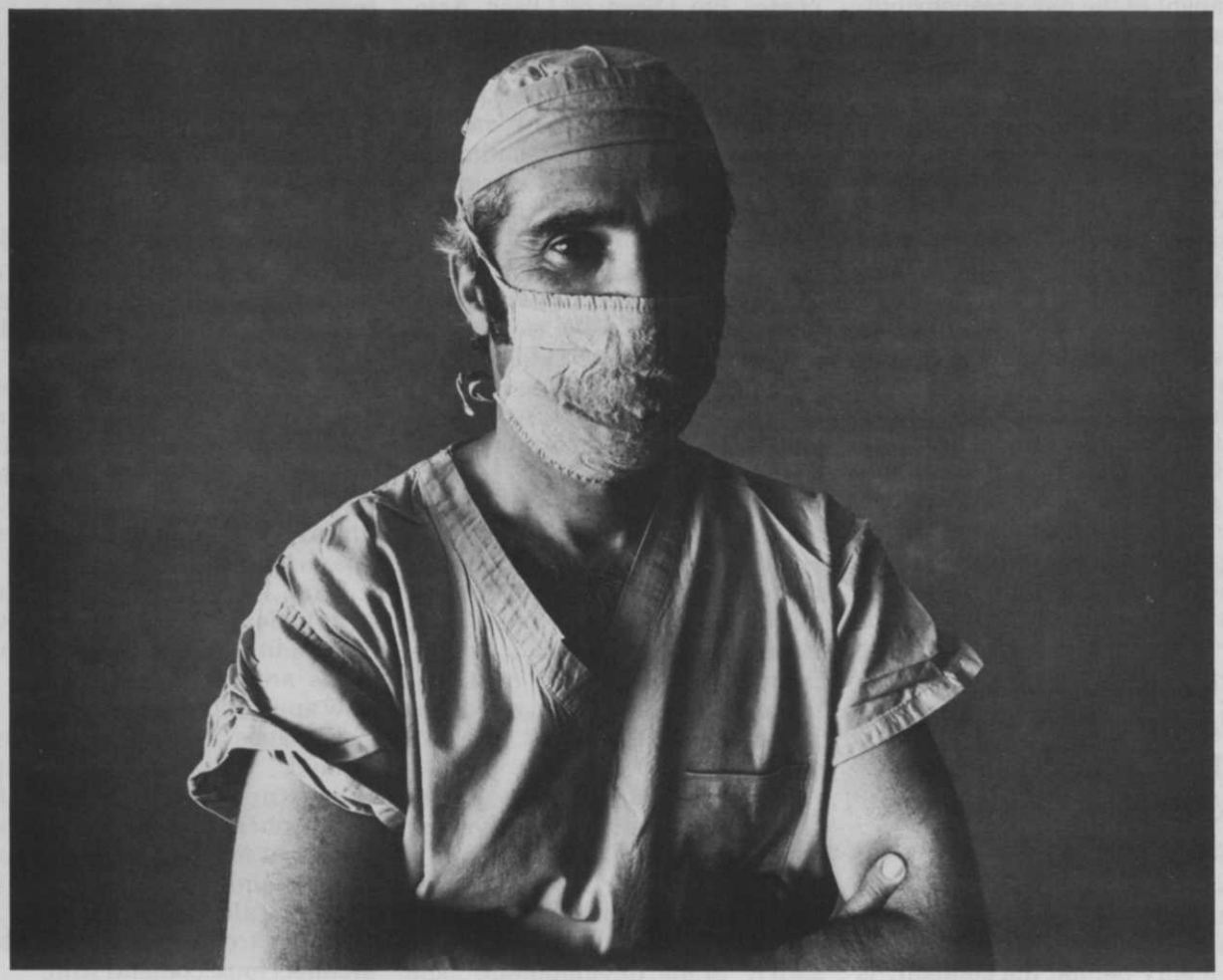

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Profiles in LANDSCAPE MANAGEMENT

A CONTINUUM OF PROGRESS

Denver firm breaks new ground, sets new trends in landscape architecture

By MAUREEN HREHOCIK, Associate Editor

It is 6 a.m. on a clear Denver morning and Randall Boyd Fitzgerald is already at her desk at home working on a recreation proposal for an upcoming meeting. Many of this landscape architect's days start out the same way—a little breathing time in the morning before the onslaught of the day's responsibilities at the office.

Fitzgerald, at 35, is somewhat of a maverick in the field of landscape architecture and readily admits it. Co founder of the Denver firm, the Continuum, she is breaking new ground in what is considered a rather conservative profession. Authoritatively and articulately her conversations are punctuated with words like "balance," "leading edge," and "quality."

The Continuum was founded in April 1982 by Fitzgerald and William Johnson of William Johnson Associates of Ann Arbor, MI, after three years of careful planning. Johnson was recently Dean of the School of Natural Resources at the University of Michigan and founding principle of Johnson, Johnson and Roy of Ann Arbor. The theory behind the company is the formation of an inter-disciplinary network of professionals in planning and landscape architecture, law, economics, conflict management and public participation and research. Through this forum, the founders envision being better able to serve the complete needs of their clients. There are currently about 15 organizations and individuals participating in the Continuum. They include Paul Wehr of Colorado University; BBC of Denver, an economics firm; Synergy, a land planning and landscape architecture firm (of which Fitzgerald's husband is a partner); and a Denver law firm specializing in environmental law. The Midwest contingent of the company includes Jim Olsen of Olsen Associates, a legal firm; Elan, a computer programming company; and William Johnson Associates.

> "This industry doesn't always exchange information enough or use resources as well as possible."

This "new breed of cat" as Fitzgerald refers to the Continuum, samples the best of all worlds (or strives to) in meeting a client's needs by keeping the "leading edge."

"The company is very much into trend analysis," she says. "This industry, because of rapid changes, doesn't always exchange information enough or use resources as well as possible. The Continuum is trying to correct this."

As an example, Fitzgerald points to the fact that the company is currently pursuing research grants. Instead of only one company benefitting from the research, through the Continuum, it will be passed on to member organizations. In time, both Fitzgerald and Johnson hope to expand that network.

Fitzgerald knows of no other firm in the country like the Continuum.

"This is exciting because it's new enough to be evolving, but we're careful enough to be treading slowly in its development," she says. "We're really into mixed use work and large planning and design, such as facilities incorporating commercial, office and residential uses."

The philosophy of the organization is simple: it is structured to deal with changing trends within the industry as successfully and efficiently as possible.

The premise is not new.

During September of 1980 and September of 1982, the American Society of Landscape Architects held the Gwinn Conference in Cleveland. It was designed to look at the future of the profession.

Randall Boyd Fitzgerald

"What it said is what we really are trying to do here," Fitzgerald points out. "As landscape architecture grows, its diversity and role in development landscaping and environmental management develops and grows."

Why, then, with such findings, aren't more firms throwing away the traditional trappings of landscape architecture and trying the new approach?

"Because it's totally unproven ground," Fitzgerald says simply. "Landscape architects are often very conservative. A maverick? Well, yes, maybe I am, but the concept certainly isn't new."

Fitzgerald lists some of the changing trends today's landscape architect must contend with.

"Landscape architects are having to deal with trends that weren't present 10 years ago such as the changing use of people's leisure time. The diversity and types of activities have changed. People are, for the most part, staying closer to home. More people are also involved with computer technology and that high technology has to be balanced with human interaction.

continued on page 52

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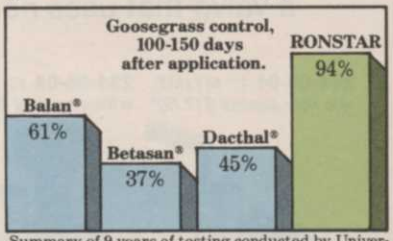

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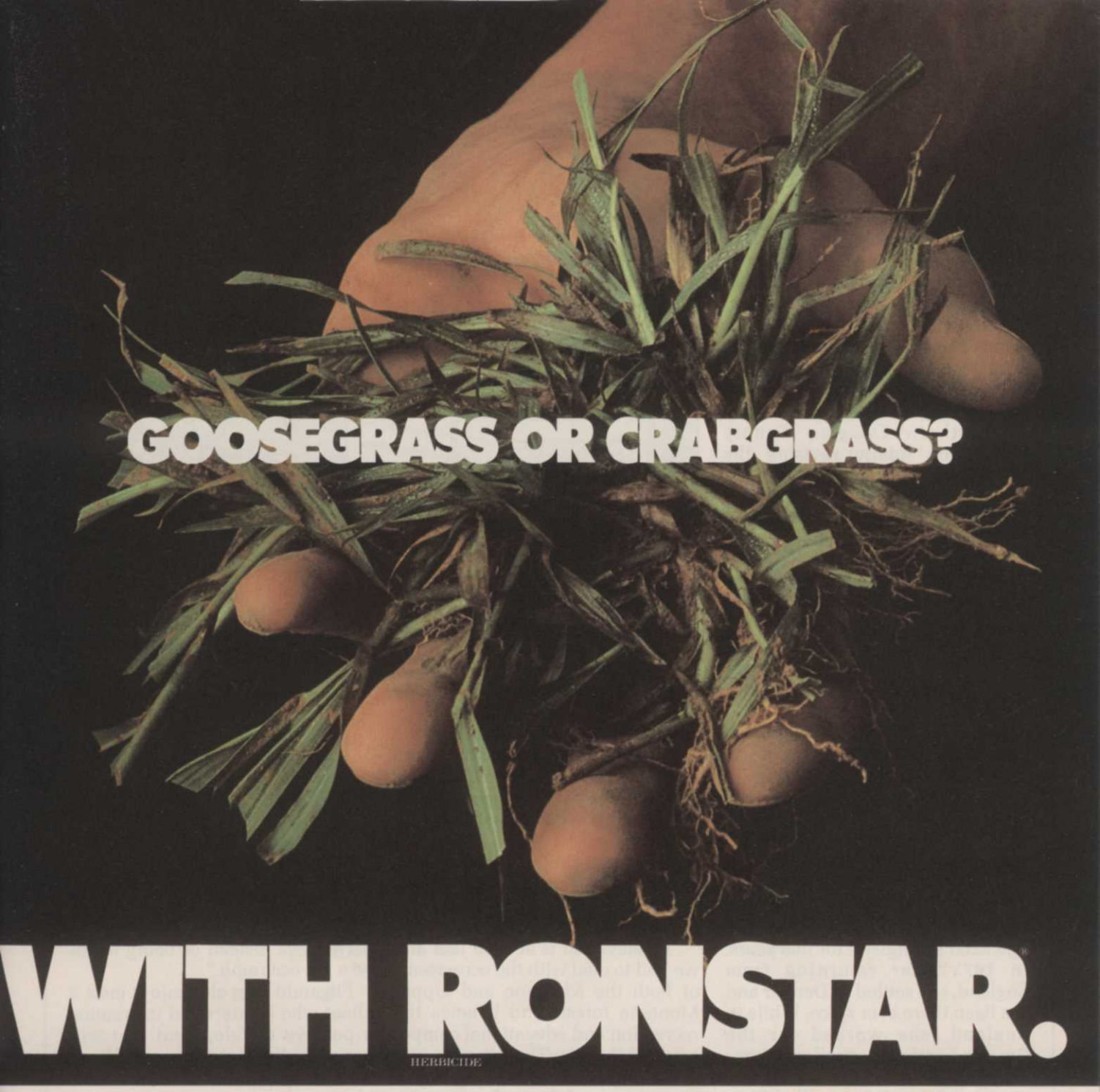

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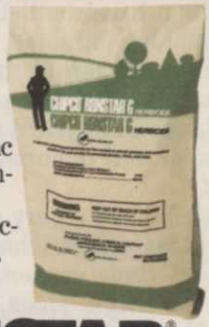

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There's also the constant preoccupation with fitness. There has to be a regard for the total integration of how people live, work and play. Communities want and need an identity of their own. We have to deal with the increasing number of choices people have."

With these considerations in mind, The Continuum continues to attract interest as well as clients.

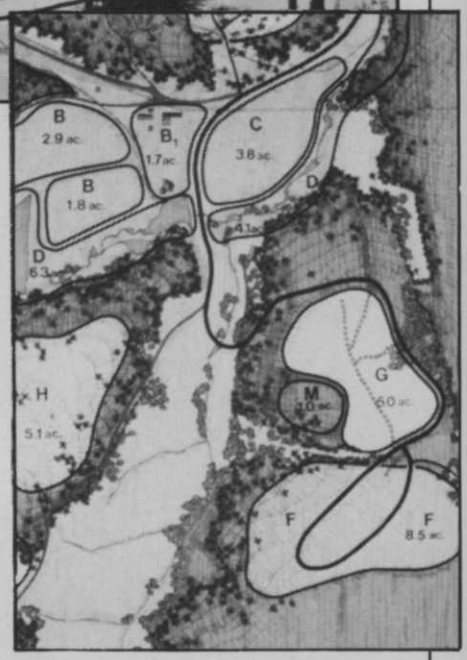
Fitzgerald is currently working with synergy on a 3600-acre ranch in northern Douglas County (Colorado), totally revising the master plan.

"This project has tremendous potential," she enthuses, the interest in her voice noticeably rising. "We want to make it the gateway to Denver from the South. We also want to give it an urban focus—the Town Center contrasting to the suburban quality of Greater Denver. We are trying to create a focus or identity for the southeast corner of the Denver area."

The Continuum has been working on the project since last April. The number of projects Fitzgerald works on at once varies, and she says she isn't working on as many as she'd like, However, the challenges and the potential are still there.

Fitzgerald graduated from the University of Michigan in 1970 and practiced in England for two years. In 1972 after returning from England, she settled in Denver and has been there ever since. While in England, she worked for the Greater London Council on a project that still remains one of her most satisfying. It was called New Town at Bletchley. Situated on the River Thames, Fitzgerald says the greatest challenge of the project was the balance of physical design with the social and economic circumstances.

"The English have a very different set of ideas about what they want, such as their gardens, and definitely no high rises," she explained, "but it's achieving this balance between the confines of the job and what the client wants that is the fun part of this profession for me."



Bell Ranch *is a camp and conference center where Fitzgerald had to incorporate the natural diversity of the land with educational and recreational uses.*

After returning to the U.S. from England, Fitzgerald worked for four months with the Olympic Committee in Denver which tried to organize a massive statewide recreational event. It never really got off the ground, but she said the experience of working with them and all of the contingencies such as transportation and housing a project like this would entail, made it worthwhile.

A smaller project Fitzgerald is particularly pleased with is the Bell Ranch Camp and Conference Center in Evergreen, CO.

"Its elevation is at 8000 feet and we had to deal with the ecosystems of both the Montane and Upper Montane forests and balance the recreation and educational components of the site. The resource was the diversity of the land itself. We were involved from the comprehensive planning stages to site design.

Prior to co-funding the Continuum, Fitzgerald worked for the THK Associates of Denver.

In the diversity of projects she's worked on, Fitzgerald has found one constant and that is the need for the landscape architect to be as involved in the initial planning stages of any project as early on as possible.

"It's not that we want control over the project, it's just easier to offer opinions and options at an early stage instead of being handed a *fait accompli.*"

Fitgerald says she enjoys most a client who is interested in creating a positive development that will have quality environmentally as well as being economically feasible.

"Some clients don't understand economic benefits of quality, and it can be a tough road to bridge," she says.

One of the things Fitzgerald enjoys most about her work is the diversity.

"There will always be traditionally organized landscape architect firms," she said, "and that's fine, but we all must get more involved in effecting decision-making as early on in a project as possible. We must learn to balance the high

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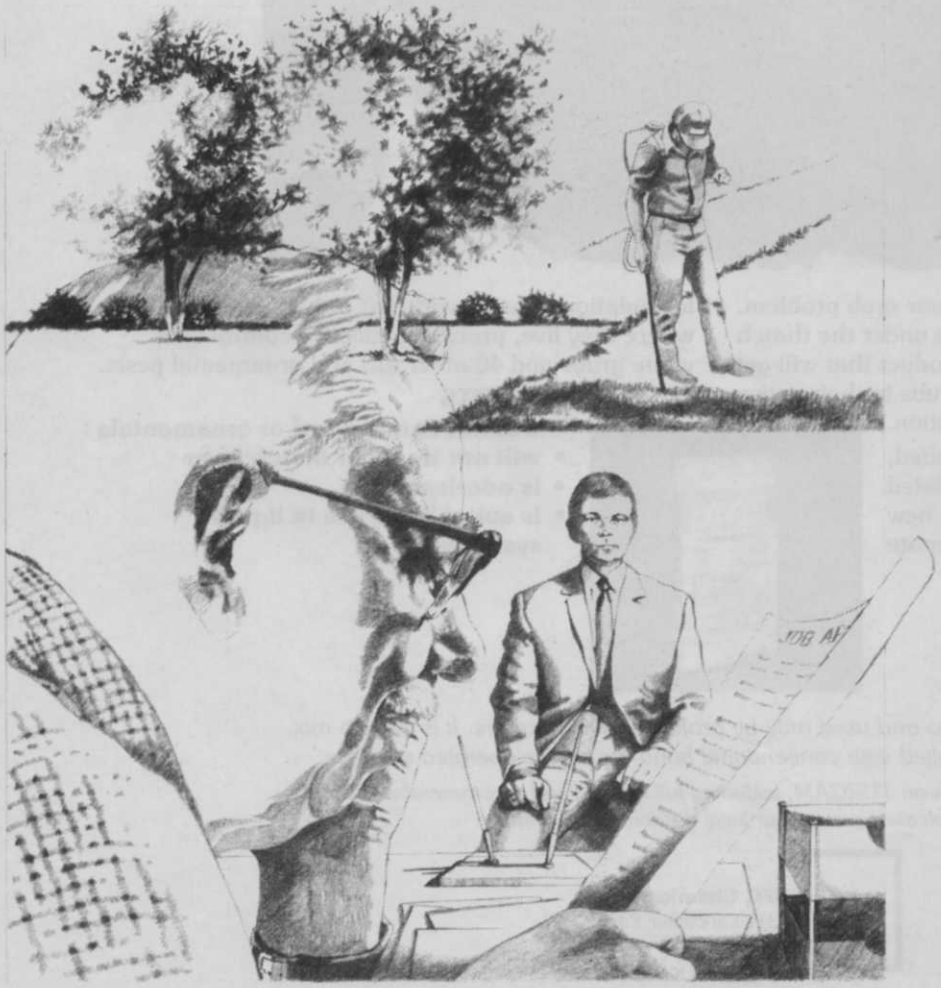
Establishing a sensible seasonal labor pay policy for turf employers and employees

LAYOFFS MAY NOT PAY OFF

By RICHARD I. LEHR



The seasonal nature of the turf industry has traditionally meant that turf employers would only hire on a seasonal basis. However, the sophistication of the turf industry in methods, materials and research, has reached the point where many turfgrass employers are finding a seasonal labor policy may have become unaffordable. This article summarizes the problem of developing a labor relations policy for a business that is still seasonal for most employers, and then developing alternatives where the turf employers could have the option of employing individuals on a year-round basis.

During the winter months, when cash flow problems develop, many turf employers prefer to lay off technicians, making them eligible for unemployment, and hope that they will still be in the labor market when the turf employer gears up for the new year. Though the turf employer saves an immediate payroll cost by laying off a technician, he will have lost approximately $2,000 if that employee needs to be replaced next year. That $2,000 figure is the estimate of what it costs to train a replacement. In addition to the costs of training, the turf employer loses business opportunities with turnover because a replacement is now going into the neighborhood who must begin over again in developing rapport with the customers and an identity such that other neighbors could be attracted to using the turf service.

Finally, though laying off employees saves an immediate payroll cost, it does increase the turf employer's unemployment tax. Therefore, this rate, which is an

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Richard I. Lehr is a partner in the Birmingham, AL, law firm of Sirote, Permutt, Friend, Friedman, Held & Apolinsky, P.A. and chairman of the Management Labor Law department. His firm represents a large contingent of turf-oriented employers across the country and internationally. Lehr is a frequent speaker on labor-related topics at turf conferences across the country. Periodically during the year, this column will address key issues facing the Green Industry in the labor area.

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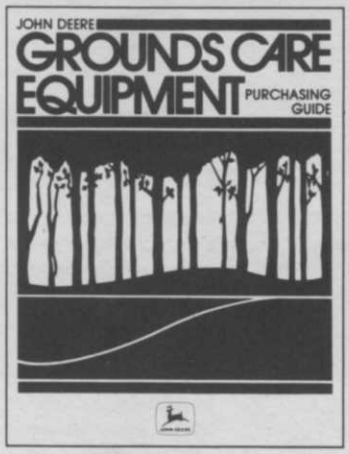

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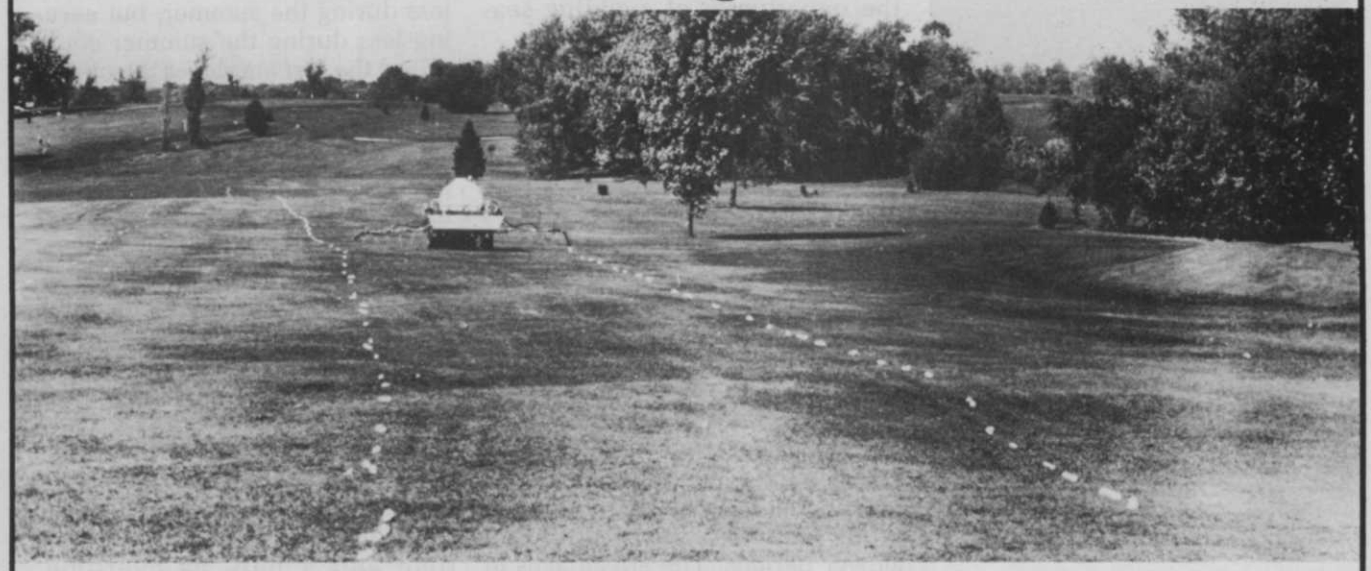

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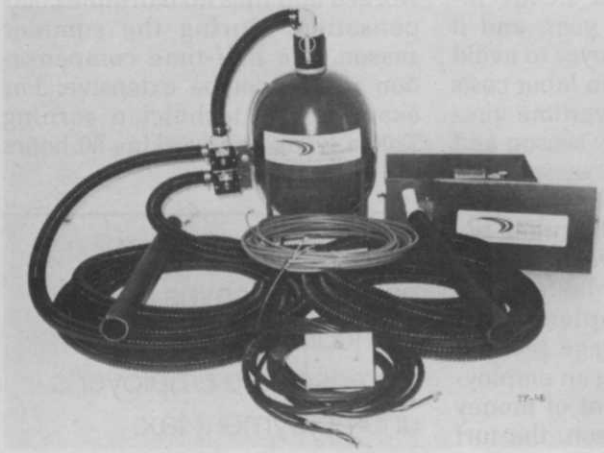

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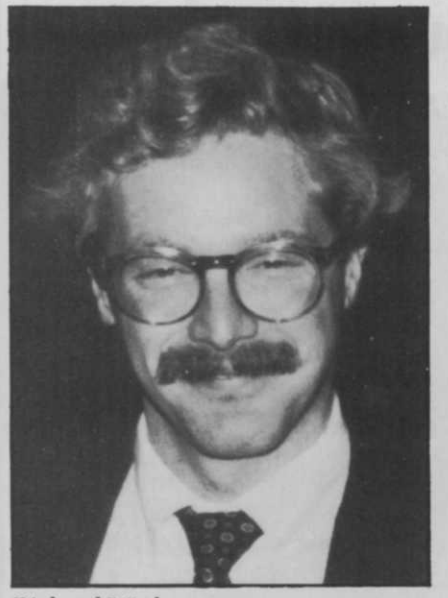

Richard I. Lehr, attorney

analysis based on the number of weeks former employees received unemployment compensation during the year, is an additional expense which the turf employer assumes during layoff periods.

On the other hand, employing a technician on a year-round basis poses problems during the off-season due to a cash flow shortage. Additionally, there is only so much vehicle and equipment maintenance which can be done during the off-season. Basically, what can a technician do, even though he is on the payroll? Finally, if the technician is used to making a considerable amount of money during the busy season, whether on a bonus and/or commission basis, isn't it possible that he may quit during the off-season, when even though he is receiving a steady paycheck, it is for less than what he was receiving during the season?

We have seen the seasonal layoff or year-round approach work successfully for turfgrass employers. Some employers will hire individuals for the season at a minimum wage, plus overtime, and then lay them off immediately at the conclusion of the season. Others perhaps pay their technicians more, keep them employed year-round, have less turnover, and are equally as profitable. Therefore, success and failure exists with either policy. Hopefully, some of the following ideas will assist turf employers in structuring their employment policies to afford them the opportunity of avoiding seasonal layoffs.

An initial approach that could be used is to structure a pay system such that the employee is paid a relatively steady salary throughout the year, regardless of the variations in the amount of hours worked. For example, a seasonally-adjusted wage program is a situation where an employee during the busier time of the year receives a lower hourly rate than during the slow period. Because the employee works overtime hours during the busier season, the overtime rate, when added to his hourly rate, should be roughly equivalent to what he will earn during the slower periods. The advantages to this system are that it facilitates the opportunity for an employee to plan financially on a steady income throughout the year, and it also enables the employer to avoid the wide fluctuations in labor costs between excessive overtime premiums during the busy season and layoffs during the slow season. The overtime expense within this program will not be as substantial, because the turf employer is paying the employee a lower hourly rate. The premise for implementing seasonally-adjusted wage plans is that rather than paying an employee a substantial amount of money during the busier season, the turf employer is, in essence, saving some of the money to compensate the employee during the slower time of the year.

Alternatively, a turf employer may compensate the employee during the summer season on some type of a production bonus pay system, and then shift to an hourly rate or fixed salary program during the off season. Again, the weekly salaries could be substantially equivalent, because of the turf employer's ability to take a little bit of the excess payment during the summer and use that to spread out compensation for over a 12-month period.

Either of these pay systems will avoid the situation where a technician is earning up to $400 a week during the turf season and collecting either $90 or $120 a week unemployment during the off-season. The technician would earn less during the summer, but earning less during the summer could afford the turf employer the opportunity to keep the technician employed year-round.

Other pay systems could accomplish the same objective of affording the turf employer the opportunity to employ technicians year-round, but they would be slightly more expensive than the ones discussed above. For example, a fixed salary for fluctuating work week program guarantees an employee his salary regardless of whether he works fifteen minutes or forty hours in a given work week. For each hour worked over forty, he is paid "half-time", not time and a half, as overtime. Therefore, during the slow season there will be no half-time hours worked and thus no half-time compensation. During the summer season, the half-time compensation would not be extensive. For example, the technician earning $200 a week and working 50 hours during the season will have to be paid an additional $20 as half-time. During the off-season, he is simply paid a flat $200 a week salary. Alternatively, a turf employer may pay an employee on fixed salary for fluctuating work week a lower weekly salary during the business season and a higher weekly salary during the off-season, which when half-time is averaged in, will approach the seasonally-adjusted wage plan discussed above.

Although laying off employees saves an immediate payroll cost, it increases the employer's unemployment tax.

Assume that the compensation aspect can be structured such that when the turf employer figures the savings by not laying off people and develops a pay system so that the payroll costs are rather constant for the year, he then has the

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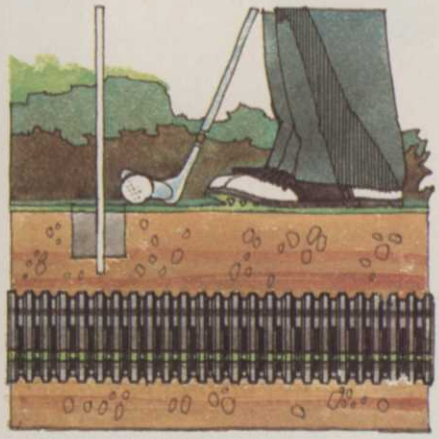

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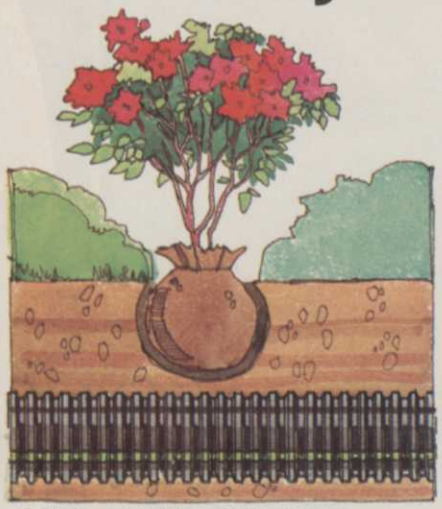

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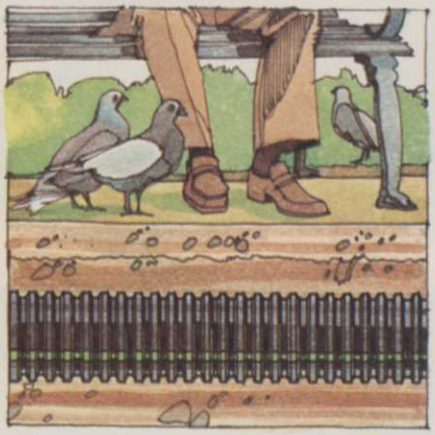
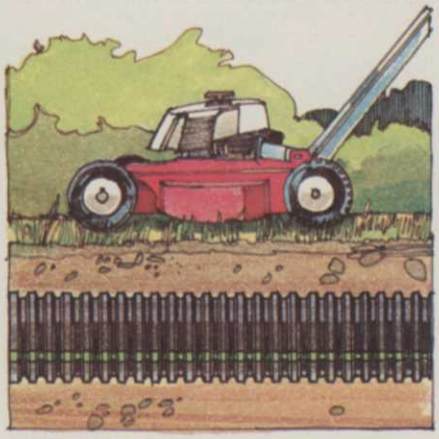


ADS controls water runoff in heavily trafficked areas.

Sandy soils call for ADS Drain Guard® — the nylon filter that won't block or clog.



ADS tubing — a small part of your turf care budget.

Whether you buy or sell turf care products, you want quality. That's why ADS polyethylene tubing is your best bet. For healthy soil, drainage is important. Strong and durable, ADS tubing provides years of trouble-free drainage, and helps maintain stable soil systems.

ADS is easy to install, requiring less labor and no heavy machinery. A flexible tubing, it follows ground contours and adapts to underground obstacles. And, ADS tubing won't rot, rust or break down during handling or backfilling. A full line of accessory fittings and couplings he!p simplify even the most challenging installations.

At a cost of just pennies per foot, ADS means quality AND value.

This season rely on ADS drainage tubing. You deserve the best.

SPECIFICATIONS

ASTM F-405, Standard Specification for Corrugated Polyethylene Tubing and Fittings. **SCS,** National Engineering Standard, Code 606. **ASTM F-667,** Standard Specification for 10", 12" and 15" Corrugated Polyethylene Tubing.

Look for the ADS green stripe

It's your sign of quality — #1 in the land.

ADS®

ADVANCED DRAINAGE SYSTEMS, INC.

Corporate Office
3300 Riverside Drive
Columbus, Ohio 43221
(614) 457-3051

For additional product and technical information, contact your nearest ADS sales office.

To serve your drainage needs, ADS operates 21 manufacturing plants nationwide, and the eight regional sales offices listed below:

Madera, CA	209-674-0903
Iowa City, IA	319-338-3689
Bellevue, WA	206-643-2770
Monticello, IL	217-762-9448
Atlanta, GA	404-393-0602
Napoleon, OH	419-599-0585
Livermore, KY	502-733-4324
Palmer, MA	413-283-9797

Circle No. 101 on Reader Inquiry Card

Net Contents 2 Gallons/7.57 Liters
Daconil 2787
Turf Care

Proof that the best fungicide costs less.

There's no doubt why Daconil 2787® flowable fungicide is the preferred fungicide on America's tees and greens. It consistently delivers superior control of 9 major turf diseases.

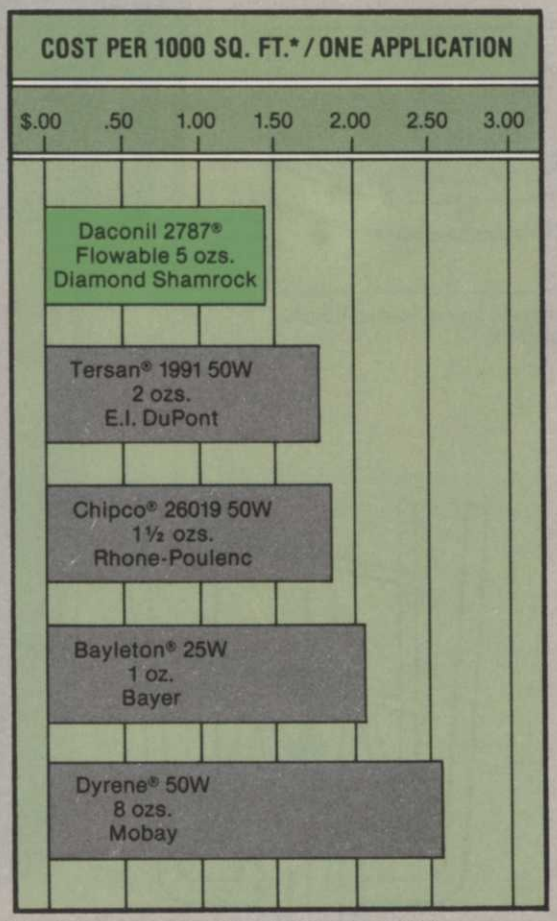
But what you may not know is that Daconil 2787 is more economical to use than the other leading fungicides.

Using a typical spray schedule, Daconil 2787 gives you greater savings on a per 1000 sq. ft. basis when it comes to controlling your most serious diseases — dollar spot (including benomyl-resistant dollar spot), Helminthosporium (leafspot and melting-out) and large brown patch.

Take a look at the chart. See for yourself how the cost of Daconil 2787 compares with the other leading fungicides on tees and greens.

Here are more reasons why it pays to use Daconil 2787. There's no need to add a costly spreader/sticker. Daconil 2787 already has it built in to assure full and even coverage for maximum disease protection.

And Daconil 2787 resists wash-off, so it keeps on working during heavy rains or watering.



*Costs based on manufacturer suggested retail unit price as of January, 1983.

What's more, in 15 years of continuous use, there has never been a documented case of resistance with Daconil 2787. Even on courses where it was applied at weekly intervals over many years.

The facts speak for themselves. You can't buy more effective, more consistent disease control on tees and greens than Daconil 2787.

Add to that the important cost savings you get spray after spray, and you'll see why Daconil 2787 gives you more for your fungicide dollar.

So this season go with Daconil 2787 from Diamond Shamrock. Because the best costs less.

Diamond Shamrock

Agricultural Chemicals Division
Diamond Shamrock Corporation
1100 Superior Avenue
Cleveland, Ohio 44114

Always follow label directions carefully when using turf chemicals.

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RAIN BIRD®

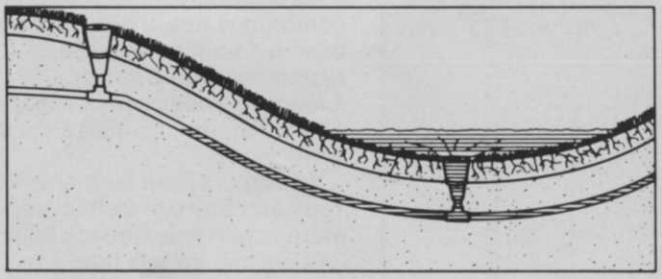
THE SPRINKLER FAMILY THAT MAKES LIFE EASIER.

MINI-PAW sprinklers offer low trajectory throw and superior performance with low gallonage operation.

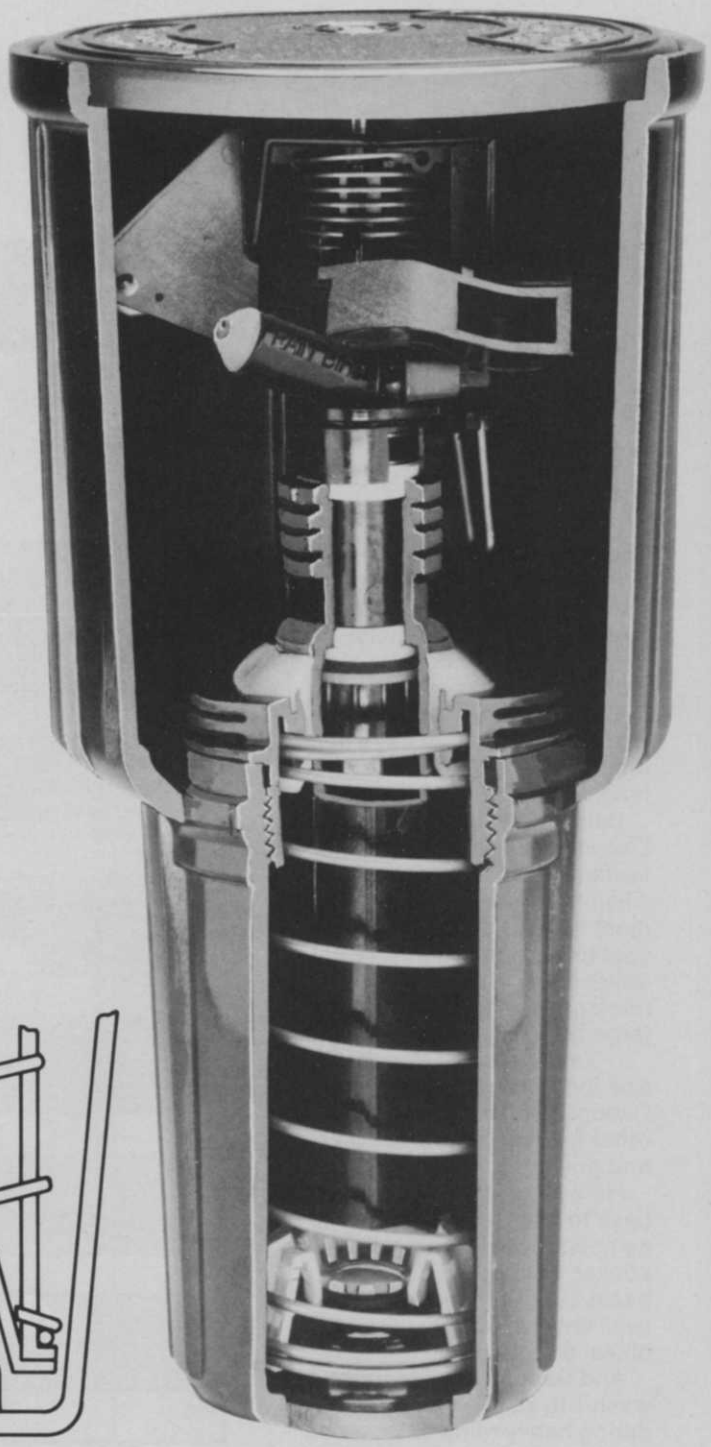
MINI-PAW sprinkler performance is boosted with new nozzles that provide "Short Range" and full or part circle performance out to 40 feet.

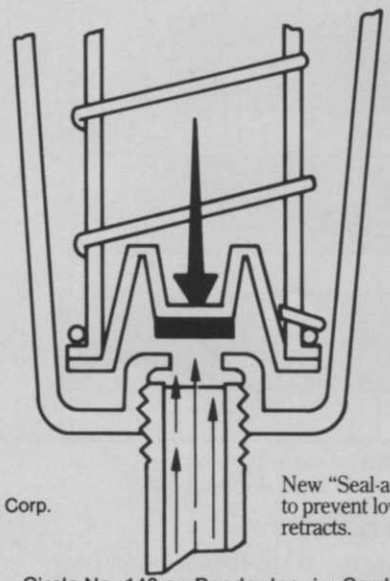
Just about every irrigation professional is familiar with the Rain Bird MINI-PAW® pop-up sprinkler. The word is out that the MINI-PAW 15103 outperforms its competition six-to-one, efficiently covering the same area as six conventional spray heads. That means installers have less pipe and fewer valves to worry about and simplier operation and quicker installation to look forward to.

Now Rain Bird technology makes life even easier with three new MINI-PAW models that incorporate the same precision engineering that went into the original—with a few added bonuses. Rain Bird had added low head drainage prevention, short range performance and full or part circle throw out to 40 feet. More than ever, the MINI-PAW family is simply better.



Low head drainage occurs when water seeps out lowest head on the line. New "Seal-a-Matic" option prevents this problem.





New "Seal-a-Matic" option closes inlet to prevent low head drainage when sprinkler retracts.

RAIN BIRD SALES, INC.
Turf Division
145 North Grand Avenue
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(213) 963-9311

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MOWER EFFICIENCY

Mid-size, walk-behind mowers are replacing mid-size riding mowers and small trim mowers for many maintenance contractors.

By BRUCE F. SHANK, Executive Editor

The 36-inch Exmark, *a new entry in out-front mowers.*

Sales of mid-range, walk-behind mowers are booming according to manufacturers and distributors called recently by *Weeds Trees & Turf*.

Price and Efficiency are the reasons why, according to landscape maintenance managers.

"We do see contractors going from larger to smaller mowers for cost-effective reasons," says John Kinkead of National Mower Co. "Many contractors are replacing 21-inch push mowers with 36-inch or wider walk-behind mowers," reports Stan Byers, president of Bunton Corp.

"I started to notice the switch two years ago," says Ron Kujawa, owner of Kujawa Enterprises in Cudahy, WI. "But, it is very difficult to make a blanket statement. Every working site is different. Overall, the mid-range walk-behind mower is being utilized more by maintenance contractors."

Kujawa sells F.D. Kees mid-range mowers, but he also mentioned the new Ex-Mark, Bobcat, Bunton, Giant Vac, and Gravely walk-behinds.

"For years there was a tradition for contractors to upgrade from handmowers to 48-inch or larger riding mowers, says Don Synnestvedt, vice president of Theodore Brickman Co., Long Grove, IL. "This is no longer the case."

"Time-motion studies have proven to me that in a large proportion of our work the walk-behind mower is more cost effective than riding or small push mowers," says Carl McCord, President of Landscape Design and Construction of Dallas, TX. "Anything under 52-inches wide might as well be walk-behind. The workers find the walk-behinds more maneauverable and cooler to operate."

Dave Marsh, president of Industrial Landscape Services, Cupertino, CA, "We use 36-inch walk-behinds for trimming. A typical crew has one 21-inch and two 36-inch walk-behinds on their truck. We don't have many jobs with a large amount of flat area, however. You can almost do an average mowing job with just the walk-behind. "We have two riding mowers which we transport crew to crew where needed. But, they probably get less than 2 hours use per day."

"We bought one Bobcat in 1981 and have since bought four more," says Al Alvarino of Classic Landscapes, Raleigh, NC. "They are a third of the cost of riding mowers. We use our trim mowers only for around patios. Our mowing crews get as much as 7 hours a day from the walk-behinds."

"Bigger seems to be better," says Ted Smith, president of Smithco. "Depending on what type of turf areas he has to mow, the contractor is buying wider mowers so he can get more done and therefore save time and money on most every job. This also applies to riding mowers."

"The real impact or trend, if there is one, is hard to identify statistically," says Steve Williams, senior marketing manager for Toro Commercial Products. "It really depends upon the nature of the contracts. A riding mower remains more cost effective in many cases. With a riding mower, there are certain space restrictions which a walk-behind may be able to handle." Williams would not divulge Toro's plans in the walk-behind area.

Roger Thomas of Jacobsen, feels there is an equally great trend toward riding type units with grass catchers. "In recessionary times, many smaller businesses start up and they may be buying the smaller pieces."

Byers of Bunton disagrees. He finds both large and small firms switching. The large walk-behinds

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Hydraulic mulching process has saved labor costs because it requires one less worker than blowing straw does. **(Below)** Freedom Park is one of Charlotte's 91 parks and is one of the oldest.

MULCHING HELPS CHARLOTTE GROW

Park system saves in labor costs and gains versatility in maintenance program

By HENRY FOX,
Operations Supervisor,
Charlotte Parks and Recreation Department

Hydraulic mulching may just be the edge needed for flexibility and as an alternative to straw for mulching. It has provided mulching options in our park system that we didn't have before.

The Charlotte Parks and Recreation Department in North Carolina consists of more than 1,600 acres of property, providing Charlotte's 315,000 residents with a variety of leisure-time activities. Facilities include 91 parks, 16 recreation centers, three pools, a golf course, stadium and other amenities. Annual budget for fiscal 1982 was more than $4.5 million.

The department is divided into several agencies, including Park Operations, which I supervise. The 220 people in this area are responsible for maintaining, beautifying and landscaping new and existing facilities.

Turf establishment is a critical component of any park department's annual program. Charlotte's is no exception. A good program, in my mind, has to be versatile; I think ours is. And one of the reasons is our ability to use the hydraulic mulching. The process has saved us labor and developed quality grass. It has been especially effective on steep slopes and for erosion control.

The hydraulic mulching process

The site is tilled to loosen the soil and eliminate weed growth. Mulch, seed, water and fertilizer are mixed into a slurry in a hydraulic mulching machine. The machine is especially-equipped with a mixing tank and mechanical agitator to keep the ingredients in suspension. The machine also has a mulch gun. The slurry is pumped through the gun and hydraulically sprayed on

continued on page 68

A body of water is a living thing...
A delicate balance of plant and animal life. A varied assortment of creatures, many too tiny to see. A place to make peace with the world, and enjoy the wonders of nature.
But all this can change quickly. A slight shift in the environment and a tiny group of plants may suddenly burst into a teeming mass of choking weeds and slime. The effect is dramatic, as fish and other life forms struggle for survival in this hostile new world.
How to deal with these troublesome intruders? How to be sure that the delicate creatures already there may continue their existence unaffected?
The choice is Pennwalt Aquatic Herbicides. To quickly restore the natural balance. Without harming wildlife. Or human visitors.
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Liquid and granular formulations to control water weeds and algae on contact. And each is biodegradable.
Pennwalt Aquatics. Because an environment so precious should be treated with respect and care. After all, it's a living thing.
AGCHEM
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CHEMICALS • EQUIPMENT
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the ground. Because the gun can be aimed accurately from a considerable distance, we can reach hard access places with this process.

Up until two years ago we had used only straw to protect seeds during germination. Then we purchased a Finn Equipment Company hydraulic mulching machine for $10,000. At time several Conwed representatives came and spent a couple of days working with my landscape and construction foreman, Leon Shanklin. They demonstrated the hydraulic mulching process and proved its effectiveness for turf establishment in varied situations.

The labor advantage of hydraulic mulching may become more significant in coming years.

Probably the strongest advantage the product has over straw is the labor savings. Shanklin is able to apply wood-fiber mulch with just one other person, the truck driver. On the other hand, just to run the straw blower requires a third person. That doesn't include the extra men needed to seed and fertilize. The fact that we can use fewer men to spray mulch is important, especially if someone is sick or on vacation. The labor advantage may become even more significant in the coming years as we operate in increasingly tighter economic conditions.

Another problem with straw is that it is often scarce in the early spring. We can't count on having it when we need it. That's never true with the Conwed product.

Tenacity is another advantage for mulch on banks and slopes. Wood fibers form a tight mat over the seeds so they can germinate. This "mat" prevents erosion and washout from rain.

Even though they are less expensive, I've never considered paper mulches since they'd probably have chemicals. Because of the poor quality of much of North Carolina's soil, we're very conscious of using natural products

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For Information Contact Your Nearest Ransomes Distributor

EAST

Bearco, Inc. (North OH)
Cleveland, OH 44136, 216/238-2442

Brodner Equipment, Inc. (Upstate NY)
Rochester, NY 14606, 716/247-5218

The Clapper Co. (ME, VT, RI & East. MA)
West Newton, MA 02165, 617/244-7900

Conaway, Inc. (MD, North VA, & Wash. D.C.)
Lawrence, PA 15055, 412/341-6447

EDM Distributors, Inc. (CT, VT & West. MA)
Agawam, MA 01001, 413/786-6977

S.P. Lummus Supply Co. (East. PA)
Pottstown, PA 19464, 215/327-4920

Ross Lawn Equipment (Upstate NY)
Tonawanda, NY 14150, 716/691-7642

Steven Willand, Inc. (NJ, NY & LI)
Fairfield, NJ 07006, 201/227-5656

SOUTH

Adrian Metal & Tractor, Inc. (East. NC & SC)
Conway, SC 29526, 803/365-5501

Archdale Small Engine (West. NC & SC)
Charlotte, NC 28210, 704/554-7944

Florida Outdoor Equipment, Inc. (FL)
Orlando, FL 32804, 305/295-5010

Goldthwaite's of Texas, Inc. (TX)
Fort Worth, TX 76107, 817/332-1521

Goldthwaite's of Dallas (TX)
Dallas, TX 75234, 214/241-3103

Goldthwaite's of Houston (TX)
Houston, TX 77025, 713/666-4233

Goldthwaite's of San Antonio (TX)
San Antonio, TX 78217, 512/653-9660

Hudson Small Engine Sales (AL)
Huntsville, AL 35800, 205/536-9637

Lawn Care Sales & Service (TN)
LaVergne, TN 37086, 615/793-6052

Moore's Cycle & Supply (OK)
Oklahoma City, OK 73106, 405/236-3785

South Central Turf Equipment (MS & LA)
Jackson, MS 39209, 601/922-7437

Stovall & Co., Inc. (GA)
Atlanta, GA 30318, 404/352-1555

MIDWEST

Brentom Lawn & Turf Corp. (KY & South. IN)
Louisville, KY 40299, 502/491-0865

Conniff's Power Equipment, Inc. (IN & South. OH)
Richmond, IN 47374, 317/935-2344

Eagle Green Corporation (NB, MO & West. IA)
Omaha, NB 68144, 402/334-9019

Ideal Mower Sales (MI & West. OH)
Ferndale, MI 48220, 313/541-4200

Kaye Corporation (MN & ND)
Mankato, MN 56001, 507/345-5083

Olsen Distributing Company (IL)
Barrington, IL 60010, 312/381-9333

WEST

Colorado Outdoor Power Equip., Inc. (CO, WY & NM)
Denver, CO 80223, 303/733-4651

J. & J. Power Equipment, Inc. (OR)
Eugene, OR 97402-0129, 503/344-1483

Jenkins Machinery Company (CA & AZ)
Concord, CA 94520, 415/685-6685

MHT Distributing Co., Inc. (CA)
Pasadena, CA 91103, 213/798-0741

The Bob Randick Co. (CA)
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Turf-Go Northwest (WA & OR)
Seattle, WA 98133, 206/771-4885

Ward Enterprises, Inc. (UT)
Salt Lake City, UT 84104, 801/972-3287

CANADA

Consolidated Western Ind. Co., Ltd. (Alta & Sask)
Edmonton, Alta T5S 1H4, 403/484-7181

Duke Lawn Equipment Ltd. (Ont, Que, & Maritime Provinces)
Burlington, Ont L7S 1W6, 416/637-5216

Par Equipment Ltd. (Man)
Winnipeg, Man R3E 3J8, 204/775-8988

Rollins Machinery Ltd. (B.C.)
Vancouver, B.C. V5T 1H8, 604/874-6404

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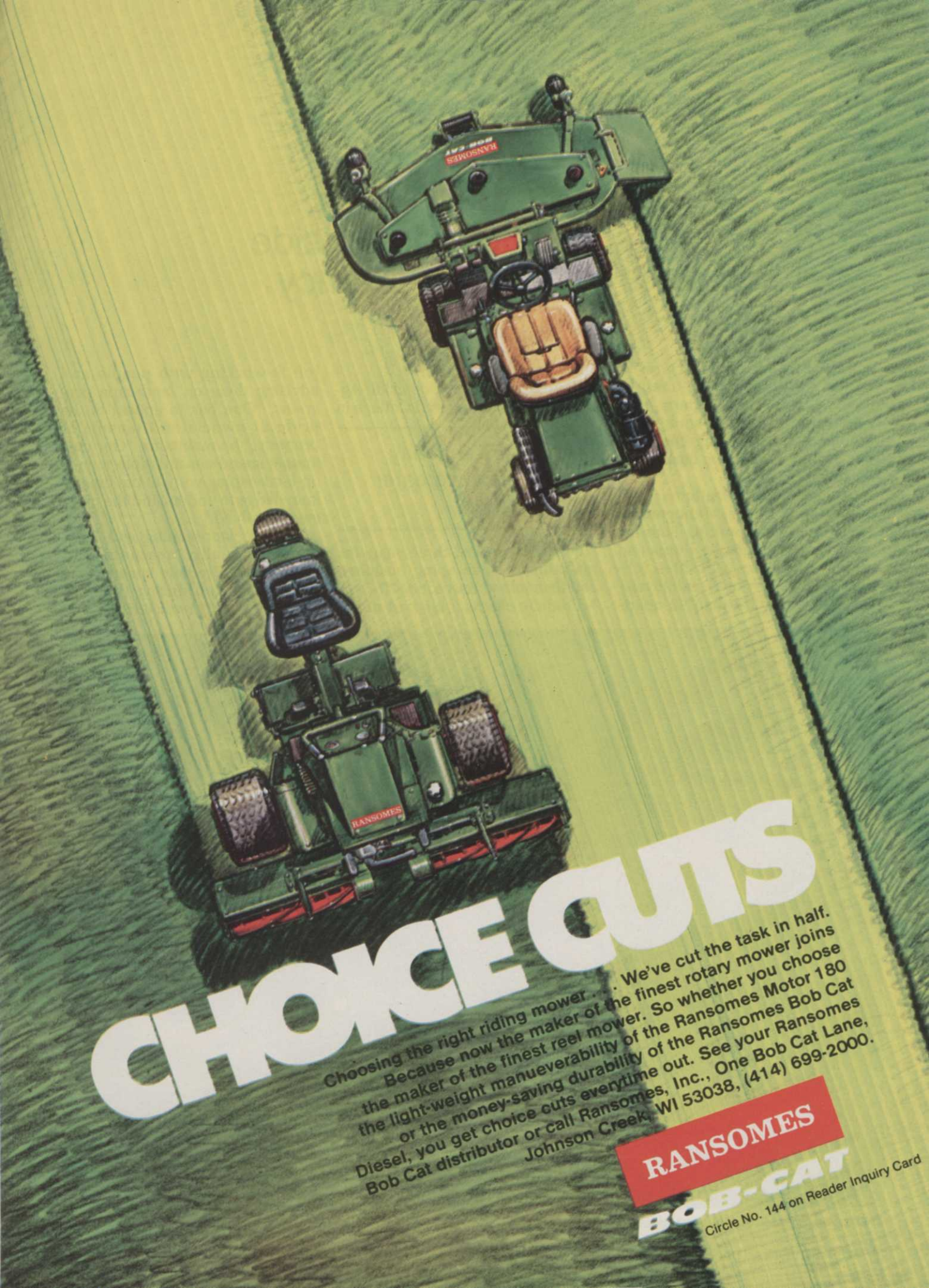
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Choosing the right riding mower . . . We've cut the task in half.
Because now the maker of the finest rotary mower joins
the maker of the finest reel mower. So whether you choose
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BRANCHING OUT

Property manager takes on outside landscaping to increase efficiency

By JENNIFER GUAY

Mike Fredette took a short growing season, the landscape maintenance division of a property management firm, and his family background in landscaping and built them into a contracting business in Albany, NY.

Fredette's organization is still part of J.T. Burns Management Corp. of Albany, serving both the properties managed by Burns and outside customers with three full-time and 12 seasonal employees. He manages more than 12 apartment complexes for Burns.

Fredette attended Cobleskill Agricultural and Industrial College in New York, worked three years for his father's landscaping business, and then joined Burns in 1973.

During April and May cash outflow is greater than income.

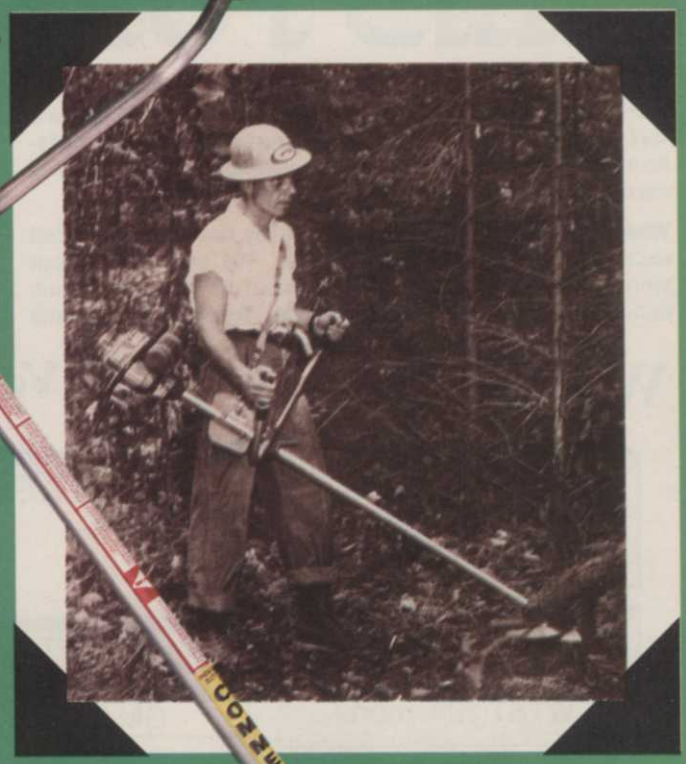
Fredette claims a big part of his job is working with people and advising them on landscape programs. "One has to appeal to the pride of owners and tenants of property," he maintains. "Our customers spend considerable money on landscaping without the time or knowledge to understand the processes involved."

Because landscaping and lawn care are highly seasonal and competitive, Fredette spends long days on the job during the busy

continued on page 74

Fredette *uses extra touches to appeal to the pride of owners and tenants.*

GET THE TRIMMER/ CUTTERS WITH THE STRONGEST ROOTS.



HOFFCO HEAVY-DUTY BRUSHCUTTER, EARLY FIFTIES.

In 1952, Hoffco built a special gasoline-powered portable brushcutter for the U.S. Forestry Service: A fast, dependable way to clear firebreaks and save trees.

In 1972, Hoffco engineered and built the first gasoline-powered monofilament line trimmer for homeowners: A quicker, better way to trim along walls and edge along walks.

In 1983, Hoffco makes the only full line of gasoline-powered trimmer/cutters: Faster, easier ways to trim grass, cut weeds, clear brush.

You get gasoline-powered portable clearing equipment that handles the tough jobs, the easy ones and everything in between. You get a well-engineered, quality-made product that works right and holds up. You get parts service you can depend on for years to come.

You can get it all from Hoffco, the company with the strongest roots. Ready for the growing seasons ahead.

HOFFCO INC.

TOUGH ON THE JOB. EASY ON YOU.

WW850 10" Brush Blade, 11" Tri-Kut Weed Blade and Tri-Line Monofilament Head standard equipment.

JP420 8" Tri-Kut Weed Blade, 2 line Monofilament Head standard equipment, 9" Brush Blade optional accessory.

WT 160H 8" Tri-Kut Weed Blade, 3 Exit Single Line Monofilament Head standard equipment.

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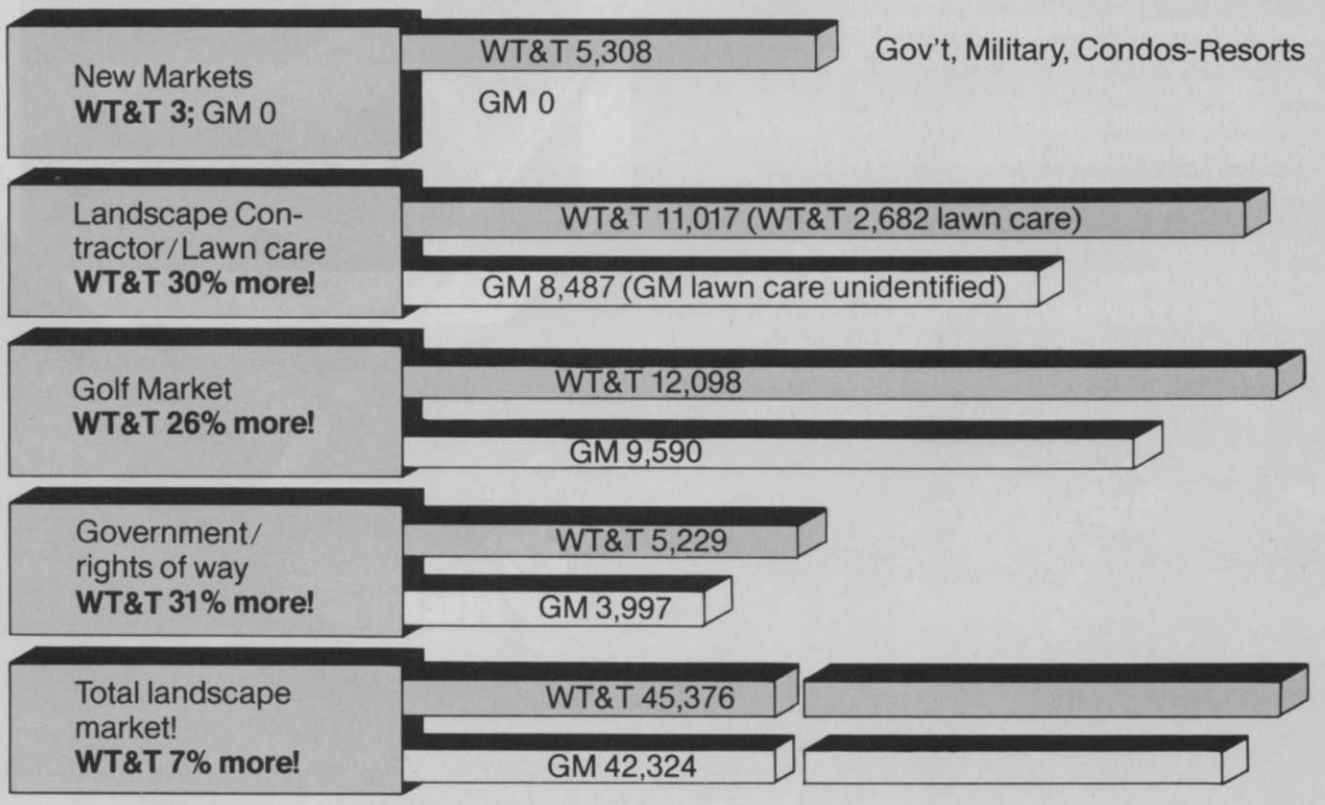
The bottom line for our advertisers is a magazine that is read from cover to cover by the green industry decision-makers who have the authority to buy their products. We deliver **MORE** readers too, and at a **LOWER** cost per thousand than our nearest challenger.

Weeds, Trees & Turf Vs Grounds Maintenance



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Sitting ducks.

There's a new way to turn burrowing rodents into sitting ducks. But it's a product that has been around for a long time.

It's called **Phostoxin.**®

Phostoxin is a well-known pest control agent. For years, it has been used to eliminate insects from grain and food storage areas. And now, with a new label, Phostoxin can help you get rid of underground pests...like Norway rats, roof rats, house mice, ground squirrels, moles, voles, gophers, chipmunks, marmots, woodchucks and prairie dogs.

You know the nasty reputations of these burrowing pests. In just a matter of days, they can inflict thousands of dollars of damage and contamination.

That's why you want to do away with them quickly and safely.

Phostoxin is **easy to use.** Simply apply the tablets and seal the burrow. As the tablets decompose, they release lethal concentrations of hydrogen phosphide. And every rodent in the burrow becomes a sitting duck.

Certified applicators have found Phostoxin to be **safe and effective.** It is applied out of doors, as a solid-form, delayed-release fumigant. As a result, gas masks are not required when Phostoxin is applied to pest burrows.

Phostoxin is **economical.** Many people have been able to get rid of their underground pests for just pennies per burrow.

Phostoxin can help you turn rodents into sitting ducks. For more information, contact your Degesch America representative:

Farmland Industries, PO Box 7305, Kansas City, MO 64116, Phone 816-459-6000; **Fumigation Service and Supply,** 10505 N. College Ave., Indianapolis, IN 46280, Phone 317-846-5444; **Fumigators,** PO Box 33342, Raleigh, NC 27606, Phone 919-832-3983; **Industrial Fumigant Company,** PO Box 1200, Olathe, KS 66061, Phone 913-782-7600; **J-Chem,** PO Box 5421, Houston, TX 77012, Phone 713-923-9401; **Lystad's,** 901 University, Grand Fork, ND 58201, Phone 701-775-6283 or 7220 Claussen Blvd., Oklahoma City, OK 73116, Phone 405-843-5876; **Van Waters and Rogers,** 2600 Campus Dr., San Mateo, CA 94403, Phone 415-573-8000.

DEGESCH

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BRANCHING *from page 70*

season. It also means he must pay close attention to cash flow.

"During the months of April and May, cash outflow is far greater than income," Fredette pointed out. He stresses his organization is in the service business and not the credit business. "This is really a matter of customer education. Our customers have come to accept our billing procedures. We bill net 30 days for work done," Fredette says. "On small jobs the customer can pay half down and the remainder when the job is completed. On large jobs, the customer pays a third of the total at the beginning, a third when the job is half finished, and the final third when the work is complete."

Fredette dryly remarks, "The landscape manager has to wear many hats; that of a horticulturist, a salesman, an employer, a public relations person, and a credit manager."

Fredette has found a good policy is to listen closely to the property owner before laying out a program. After the initial discussion, it is then possible to make suggested changes without alienating the customer.

Color photography has become an important visual aid to Fredette. "I can shoot existing projects as examples for potential customers. Photography has proven to be a great selling tool."

The landscape manager is a horticulturist, a salesman, an employer, a public relations person, and a credit manager.

Another operational procedure Fredette has found to be valuable: "Always level with the customer when figuring the cost of a job. That includes all the job, not just bits and pieces."

If the customer is aware he is being treated honestly and fairly, he becomes a potential referral for new business. Fredette estimates that approximately 10 percent of his business has come from referrals. He wants to increase that percentage.

Woodlake *is one of 12 apartment complexes managed by Fredette for J.T. Burns Management Corp.*

Advertising in the Yellow Pages as well as in the classified section of the local newspaper are two other avenues this landscape supervisor has found to be effective in getting business.

Another point relating to customer satisfaction—and it has become a "must" with Fredette, buy plants hardy to the area. His usual procedure is to buy from a reliable wholesaler in the Albany area who buys the plants/shrubs/trees from growers in New Hampshire, Vermont and Connecticut.

Winter work, such as snow removal and carpentry, is being developed to keep more employees on the payroll. Key workers are asked to sign an agreement of confidentiality.

Fredette is very picky about equipment as well. "We sharpen and balance mower blades every day. This attention to mowing equipment means a neater, more cleanly groomed lawn which attracts attention and business," says Fredette. He uses Scotts fertilizers with minor elements for both turf and trees.

Fredette's crew operates with one 18,000-lbs. stake truck, a lowboy trailer, two pick-ups, two Grasshopper mowers (52 and 61-inch) and other various equipment. He makes an effort to get full utilization out of all equipment. "Idle equipment becomes expensive equipment over a period of time."

"Always level with a customer when figuring the cost of a job."

All accounts are on computer. Before final billing Fredette inspects completed worksites. A follow-up process is done to clear the books.

Burns Management Corp. provides the computers and billing personnel. The ability to use Burns' staff and equipment not only provides increased efficiency for Burns but enables Fredette to increase income by branching out. **WTT**

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Circle No. 155 on Reader Inquiry Card

VEGETATION MANAGEMENT

By Balakrishna Rao, Ph.D., and Thomas P. Mog, Ph.D.

Q: *Is northern Minnesota too extreme for late fall fertilization programs? I am specifically concerned about direct low-temperature kill due to lack of winter hardiness. (Minnesota)*

A: Responses of Kentucky bluegrass in Minnesota to fall fertility indicate that cold tolerance is not adversely affected by late season nitrogen. The optimum rate of soluble nitrogen is approximately one pound per 1,000 square feet. Soluble fertilizers applied after October 15 tend to act like slow-release sources with visible responses the following June.

Poor surface or subsurface drainage during the cold hardening period is the major cause of low-temperature kill. Excessive available water inhibits normal reduction of plant water content during cold hardening and the internal water later forms ice crystals within the plant.

Q: *Every year as the season progresses from summer into fall our customers have to continually raise their mowers in order to avoid the "scalped" look on Bermuda lawns, both hybrid and common. We have fertilized with well-balanced fertilizers including iron and don't really have a thatch problem. It seems as if it must be a growth response to something. Do you have an explanation? (California)*

A: Without having sufficient information concerning mowing height and frequency, it appears the scalped effect could be due to letting the grass grow too tall before cutting it. If Bermudagrass is mowed frequently it is not necessary to raise the cutting height to avoid a scalped appearance, although sometimes Bermudagrass may produce upright growth which, when not mowed properly, may appear to be scalped. With proper irrigation and fertility management, turf should green-up quickly and if mowed frequently, should not require a change in cutting height later on.

Sometimes dull mower blades may pull tall grass plants resulting in the scalped appearance you describe. Common Bermudagrass should never be mowed less than one inch.

Q: *A pond was treated with aquazine for weed control. The water from this pond was used to irrigate bentgrass which resulted in injury. Could you please suggest some guidelines to remove the herbicide contamination from the pond water and how soon the water can safely be used for irrigation? (Canada)*

A: Reports indicate that aquazine (simazine) even at 1 ppb. can be toxic to bentgrass, which is extremely sensitive to this herbicide. Repeated use of even slightly contaminated water can accumulate the herbicide in the soil resulting in turfgrass injury.

Activated charcoal is generally recommended to remove triazine herbicide contamination. Ideally, the entire pond or the contaminated body of water should be treated with activated charcoal. Perhaps, this would be difficult to manage, if not impossible. An alternative suggestion is to pump the pond water through an activated charcoal filter into a holding pond or a tank. Water coming out of the filter should be periodically monitored for herbicide residue.

In addition to monitoring to establish a safety level, I also recommend that the water be tested on small bentgrass test plots to further verify that it would not be phytotoxic.

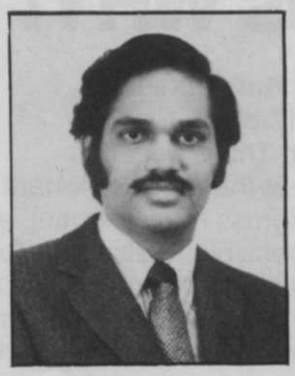
Q: *It's not even summer and leaves are dropping from some maple trees. The leaves don't turn color, they just fall off. What is going on? (Illinois)*

A: The maple petiole borer, June bettles and aphids are three of the more common causes of this problem.

It is the small larvae (caterpillars) of the maple petiole borer which do the damage. The adult petiole borer is a sawfly, a wasp-like insect. The larvae bore and feed inside of the leaf stalk. As a result, the petiole is weakened and breaks off a short distance from the leaf blade. The larvae usually stay behind in the stub which is still attached to the tree. The insect and the petiole stub fall off later. This insect overwinters as a pupa in the ground. I am not aware of an effective means of controlling the maple petiole borer.

The larvae of June beetles, also called May beetles, are white grubs which live in the soil. The adult beetles can fly. The adults feed on tree leaves and leaf petioles which brings about the leaf drop. When beetle feeding is the cause of the leaf drop, the length of the petiole which remains attached to the fallen leaf will normally be longer than the stub associated with petiole borer injury. Insecticide applied to the foliage should control May and June beetles. More than one application may be necessary.

Aphids are small, soft-bodied, rapidly-reproducing, sucking insects. Aphids can build up to excessive numbers almost overnight. Stress, induced by countless aphids sucking the sap from the leaves, will cause shedding of the leaves. This is especially true during a dry spell. When aphids are the culprits, the petiole of the shed leaf will not be chewed away or shortened. It often takes several foliar sprays of an insecticide to alleviate an aphid problem.



Balakrishna Rao is plant pathologist and Thomas Mog is pest management specialist for Davey Tree Expert Co., Kent, OH.

Questions should be mailed to Vegetation Management, Weeds Trees & Turf, 7500 Old Oak Blvd., Middleburg Heights, Ohio 44130. Please allow 2-3 months for an answer to appear in the magazine.

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Circle No. 119 on Reader Inquiry Card

GET TOUGH

on
Dollar Spot
Fusarium Patch
Leaf Spot*
Brown Patch*
Red Thread*

*Approval Pending

L.I.S.T. Monthly Simplifies Plant Locating, Job Costing

When you first open L.I.S.T. Monthly, a national catalog and price list for nursery material, the rows of numbers overwhelm you. But, once you learn a few simple codes, locating and pricing plants for a job is a breeze. No more phone calls searching for each plant in a job and then getting a firm price.

Both contractors and architects should benefit greatly from this eight-month-old publication, one primary reason is the two people who created L.I.S.T. Monthly worked for major contractors. Robert MacDonald graduated from Mississippi State University's landscape contracting program and worked for Gustin Gardens in Gaithersburg, MD. He did much of the bid work for Ray Gustin's commercial division. John Cote worked for Theodore Brickman in Long Grove, IL, and is also a Mississippi State University graduate.

Currently, 145 growers have products listed in the publication. MacDonald hopes to increase that number to 600 in the near future. The February edition was 236 pages, four times larger than the original July 1982 issue.

BOOK REVIEW

Vargas Translates Disease Terms to Useful Words

Turfgrass diseases are one of those hitches to an otherwise smooth running management program. You'd rather not study them unless you have to.

Dr. Joe Vargas of Michigan State University, has tried to make the task more interesting in his new book Management of Turfgrass Diseases, published by Burgess Publishing Co.

Vargas discusses each significant disease of warm and cool-season turfgrass and explains factors which cause, encourage, or discourage them. Diseases and cultural influences are covered for home lawns, golf courses, and sports turfs.

Selection, use, and action of turf fungicides are covered in one 15-page chapter. Some authors have written entire books on this subject alone. But, Vargas has distilled down this information to the quantity desired by turf managers. He is writing specifically for them.

There are 23 color plates of diseases on turf and numerous line drawings.

The entire book is 200 pages and sells for $24.95. If you are looking for a simplified, basic guide to turf diseases and their control, Management of Turfgrass Diseases is your book. **WTT**

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on
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Chinch Bugs
Sod Webworms
Billbugs, Grubs and
Many Other Insects

The growers are divided into six regions. Distributors, mail order houses, retail operations and landscape nurserymen are included by region as well but are coded for identification.

The catalog is based upon the common and botanical names for each plant. These are in alphabetical order. Next to the plant are listed the size, container type, quantity available, average wholesale price, date of the information from the supplier, supplier name, region, price each, and quantity range for sale. Wholesale prices of all growers listed are averaged for job estimating.

By looking at this catalog, an architect can decide whether to specify a certain type of plant based upon availability. He can also tell a contractor where to find a plant if he says it's not available.

The contractor can save time doing estimates for bids and can show an architect with reasonable certainty a plant is unavailable. He may find the plant available in a smaller or larger size, but still in his area. Substitutions can be made up front rather than by post contract negotiations.

Computerized architects and contractors can access the information by phone rather than using the publication if desired. A "black box" is generally all that is required.

All plants are identified by the eight-digit American Association of Nurserymen code for future numerical identification.

McDonald got the idea when Ray Gustin hired him as a coop student from MSU to consolidate 400 nursery catalogs into one for his estimators. Gustin was one of McDonald's first subscribers.

Members of industry associations receive a discount for subscriptions. MacDonald has announced a spring special price of $36 for 12 issues. The regular price is $59. MacDonald is shooting for 15,000 subscribers.

At today's labor rates, the catalog pays for itself in less than three hours of saved time. Think of the hours you've spent paging through nursery catalogs and making phone calls. Architects, contractors, and other nurserymen should find this publication very helpful.

Subscriptions can be arranged by contacting L.I.S.T. Monthly, 218 Joseph Square, Columbia, MD 21044. (301) 964-3838.

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Circle No. 137 on Reader Inquiry Card

Latshaw is also a firm believer in soil testing. Working with a local soil company, Brookside Laboratories, once a year Latshaw gets a reading of his soil composition.

"It's really the only accurate way of understanding what the soil needs," he says. "If we need a trace element we usually go out and get that trace element. We have a very good local source of sulphate of potash. We buy Scotts' nitrogen. Off-season, I'm a firm believer in late fall and dormant feed programs usually with sulphur-coated urea and amonium sulphate. I've found I can save money by treating specific problems. We're really getting by with low fertilizer rates.

When Latshaw started at Oakmont eight years ago, the soil was not properly balanced. The calcium/magnesium ratio was bad and their was a serious potassium deficiency. The ground was also low in manganese and boron. On the other hand, the levels of copper and zinc were excessive.

"We've made tremendous progress getting everything balanced," Latshaw says. "I've always believed the key to fertility is soil balance." Latshaw also has a problem with poa annua bentgrass near the fairways and found that overseeding them with perennial ryegrass has kept the problem in check.

Latshaw had another challenge . . . that of preserving the original design of the course as much as possible.

"It also gives good contrast in color between the light green and the dark green," Latshaw said.

With all of the fairways recontoured and the videocables installed, Latshaw has only one more big project to complete. That is to edge all the bunkers and get the sand at a uniform depth throughout.

Latshaw is one superintendent who uses a triplex mower. He feels the texture of the surface improves playability according to the golfers who use his course and far outweighs the disadvantages of time and expense.

"I've always cut large aprons in front of greens," Latshaw said. "I have a Toro 84 and started using it on a few of the fairways. The membership liked it so much they wanted it done on all the fairways. When you figure our fungicide program has gone way down and the people really like the playing surface, I think the cost is justified. The cost is one thing, but people come to a golf course to play, and if they don't like what they're playing on, they won't come. I think that out of necessity within the next few years, they'll come out with a five-gang mower with grasscatchers. There really is a need for it." **WTT**

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LAYOFFS *from page 60*

question of well, so what, what am I going to do with these men? Certainly, training and vacations can only last for so long. Many companies which employ technicians on a year-round basis shift from maintenance, training and vacations to sales. That is, the technicians solicit on the routes for which they are responsible either increased or continued use by existing customers, or developing programs from other customers who have been solicited in the past but have not selected to use the turfgrass employer. Therefore, an essential part of the technician's job performance during the off-season could rest on his ability to sell services in the areas in which he worked during the year.

> An essential part of the technician's job performance during the off-season could rest on his ability to sell services in the areas he worked during the year.

A turfgrass employer who decides that he does not want to develop a pay system which would provide for year-round employment could supplement an employee's unemployment insurance. This supplement would limit the employer's ability to actually have the individual working during the off-season at various times, and there is an unreliable aspect to it—there is no assurance that the individual will not accept other employment after collecting unemployment and receiving the unemployment supplement from the employer. There are ways to avoid this, such as treating the unemployment supplement as a loan, which is extended to the employee after he signs a note to be payable upon his return to work.

Regardless of whether a turf employer structures his pay program for seasonal or year-round employment, he should oppose all unemployment compensation claims except those caused by layoffs. An

continued on page 86

MULCHING *from page 68*

which are biodegradable and organic. In addition, it reduces soil moisture evaporation.

Tips for good turf

We use wood-fiber mulch for projects 7,000 square feet or larger. The reason we set a minimum is that we don't want to leave a partial load in the hydraulic mulch equipment. We've found that four bales of mulch gives us good coverage on 7,000 square feet. Then we reload if the job requires it. Shanklin recommends greasing the equipment daily, and he takes it in for routine maintenance twice a year.

Shanklin's assistant opens the mulch bags and hands them to him for loading. Shanklin then does the mixing. When it's time to spray, the driver returns to the cab of the truck while Shanklin does the hose application. The mulch's temporary green dye serves as a visual guide to even coverage.

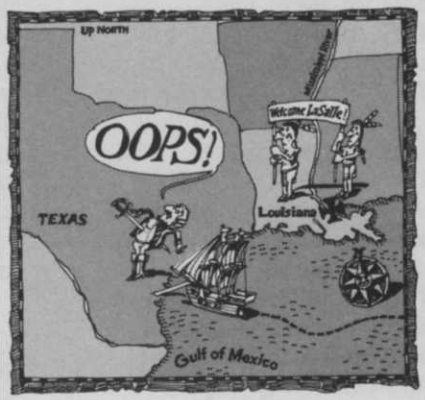
Typical projects are probably similar to those any park and recreation department would have. For example, Charlotte has 120 athletic fields. In mid-1981, we wanted to convert two baseball diamonds into a soccer field. We used Hydro Mulch fibers to develop grass on the skinned infields.

Late in the year we hydraulically mulched 18 acres of land acquired from the county. We created gently rolling hills for this multi-purpose athletic field, which would include two little league fields, one regulation baseball diamond and a soccer field. We sprayed in November in order to have grass for the spring season.

From August 15 to November 1 is our fall season, during which we seed the Kentucky 31 Tall Fescue, Creeping Red Fescue and Kentucky Bluegrass. We use the same seeds in our spring season that runs from February 15 to April 15. Then until mid-June we use the warm season Bermuda grass.

Continued on page 86

René Robert Cavelier de La Salle led an expedition across the Atlantic in 1684 to colonize New Orleans. Unfortunately his campaign failed. He missed New Orleans and landed in Texas. His faulty sense of direction was not overlooked by his followers who eventually killed him.



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tech with the traditional. This way, we can get away from reinventing the wheel and get that all-important leading edge."

Working in the Denver area, Fitzgerald says she and her associates incorporate and work with native plant material quite extensively and is very concerned with water and energy conservation.

"We found that the smaller plant materials seem to establish themselves better, anyway," she explains.

She does not oversee maintenance once a project is completed. Her husband Terry's firm, Synergy, is more in the land planning and detailed site design side of the business. He is in partnership with Jack Gilcrest. Syngergy is also a member of the Continuum.

In her over 10 years in the business, Fitzgerald has found few problems in the following areas: varieties of plant materials produced, reliability of contractors doing the installation ("I guess I've been very fortunate," she says), the supply of future landscape architects, the quality of graduates, and the amount of renovation work being done in the field.

> "The English have a very different set of ideas about gardens and landscapes."

She also rates the following as highly significant trends in the industry: use of low-maintenance native plant material, drip irrigation, interior landscaping, greater involvement by the landscape architect in maintenance programming and the emergence of design-build firms.

Meanwhile, The Continuum continues to delve into some of these new trends.

"Is the Continuum ahead of its time?" "It needs to be given some time to prove itself," Fitzgerald says. "The really exciting thing about it is that I know I have the right people working with me. It's an interdisciplinary team effort."

WTT

← Circle No. 120 on Reader Inquiry Card

EVENTS

The current issue of WEEDS TREES & TURF carries meeting dates beginning with the following month. To insure that your event is included, please forward it, 90 days in advance, to: WEEDS TREES & TURF Events, 7500 Old Oak Boulevard, Cleveland, OH 44130.

University of Florida Turfgrass Field Day, Ft. Lauderdale, FL. April 6. Contact Dr. Bruce Augustine, 3205 SW College Ave. Ft. Lauderdale, FL 33314 (305) 475-8990.

American Society of Golf Course Architects, Dallas, TX. Annual Meeting, April 9-14. Contact ASGCA, 221 North LaSalle St., Chicago, IL 60601 (312) 372-7090.

Southeastern Turfgrass Conference, Tifton, GA. April 11-12. Contact Glen Burton, University of Georgia, Coastal Plain Experiment Station, Tifton, GA 31793. (912) 386-3353.

Arizona Turfgrass Conference, Tucson, AZ. May 5-6. Contact Dr. William R. Kneebone, Dept. of Plant Sciences, University of Arizona, Tucson, AZ. 85721. (602) 626-5323.

Western Chapter of the International Society of Arboriculture 50th Annual Meeting, Anaheim, CA. May 10-14. Contact Mel Sease, Western Chapter, ISA, PO Box 7308, Riverside, CA 92513, (714) 780-8464.

Southern California Turfgrass Council and University of California Cooperative Extension Turf and Landscape Institute, Anaheim, CA. May 23-25. Contact SCTC, 1000 Concha St., Altadena, CA 91001.

Turf Landscape Meeting, University of California, Riverside, Anaheim, CA. May 24-25.

Annual Convention, Kentucky Cemetery Association, Louisville, KY. June 9-11. Contact Lewis C. Tingley, Resthaven Memorial Park, P.O. Box 18068 Louisville, KY 40218, (502) 491-5950.

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MULCHING *from page 83*

Conwed mulch promotes germination of these grasses by retaining moisture and shielding the seeds from temperature fluctuations.

The Future

Our mulch use will definitely expand in the coming years. Through a $9.7 million bond issue passed in 1978, Charlotte has funding for new recreation areas. The money is earmarked for natural preserves, district parks, neighborhood parks and special facilities. We just purchased, for example, almost 700 acres for a natural preserve. It will have hiking, camping, scenic trails, lakes and other features. Wood fiber mulch will help us develop grass in appropriate areas.

In short, the addition of hydraulic mulching to our landscape program has given us greater flexibility. We know we have a desirable, labor-saving alternative to straw.

That's important in light of our expansion plans. We conducted a study to project community needs to 1990. The study recommended we more than double the number of athletic fields to 250 and increase other facilities as well.

We'll be working with creek banks, flood plain land, swells and other spots where erosion presents a problem. Wood-fiber mulch is a good choice in these cases, and I'd recommend it to other park supervisors facing similar situations. **WTT**

Weather-matic

Reliability is the hallmark of Weather-matic lawn and turf irrigation systems. Every valve is pressure-tested before it leaves our factory. Every sprinkler head is designed for years of trouble-free operation. Every controller is durable, dependable and accurate. They're all designed to work together, so you can install a Weather-matic system — and forget about costly callbacks and repairs for years to come.

An integrated Weather-matic system is your sensible investment in landscape maintenance. Write for the name of the Weather-matic distributor in your area.

You can't beat the Weather-matic system, because it *works*.

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LAWN AND TURF IRRIGATION

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Circle No. 159 on Reader Inquiry Card

LAYOFFS *from page 83*

individual generally is ineligible for unemployment compensation if his termination was caused by poor attendance, violation of company policy, disregard of a supervisor's request, poor work performance, or dishonest act, such as falsifying time records. Whenever possible, the employer should give a "final warning" prior to termination, so there is no doubt that the employee is informed of the consequences of his future conduct. If an employee is ineligible, the turf employer will save money by paying a lower state unemployment tax.

The very nature of the turfgrass industry requires creative approaches to minimizing the financial detriment of employee turnover due to layoffs. **WTT**

MOWERS *from page 65*

can trim closer and mow on a slight grade, some things big machines can't claim. The big riders cost anywhere from $9,000 to $12,000 while a walk-behind, self-propelled unit costs between $2,200 and $3,000. They are less expensive than tractors and are more serviceable. Our 40-inch mower fits between the wheel wells of compact pick-ups and the 48-inch will fit similarly on a standard-sized pickup."

Carl McCord is preparing to reveal his time-motion study results in the near future. At that time, the specific types of jobs and efficiency of various mowers will be known. It is a trend worth watching. **WTT**

PRODUCTS

Mower equipped with three blades

A mid-mount mower, equipped with three blades capable of cutting a 60-inch path, is offered by Kubota Tractor Corp. Designed for use with two- and four-wheel drive B-8200

tractor, the mower features one front and two rear anti-scalp rollers and a pantograph linkage mechanism with four suspension points to insure smooth carriage. Cutting height to insure smooth carriage. Cutting height is adjustable at half-inch increments from 1.5 to 4 inches.

Circle No. 170 on Reader Inquiry Card

Orthene cleared for Maryland use

Orthene Tree and Ornamental Spray has received a 24-C Special Local need registration in Maryland for control of Greenbug in turfgrass.

Orthene should be applied at a rate of one pound active ingredient per acre (1⅓ acre formulated) or ½ ounce pre 1,000 square feet, when greenbugs or their damage first appear. Application should be made with sufficient water to obtain good coverage (one to four gallons per 1,000 square feet). Turfgrass should not be mowed for at least 24 hours after application.

Circle No. 171 on Reader Inquiry Card

Nozzle combats noise pollution

Spraco, Inc., of Nashua, NH, a manufacturer of a full-range of industrial spray nozzles, has introduced a new line of whisper blast-off nozzles. The Spraco-Lechler Whisper Blast Blow-Off Nozzle is a multi-channel, flat jet nozzle, which has been specially designed to attenuate noise, obtain intensive precise blowing power and minimize cost by reducing air consumption and noise levels. The units come with either ¼ inch NPT male thread or, alternatively, with steel extension tube and 5/16 inch OD hose nipple ready for clamping to any machine or machine tool.

A two-page flyer is available from Spraco giving detailed information.

Circle No. 172 on Reader Inquiry Card

New Solo brushcutter joins Multimot program

SOLO Incorporated introduces a new straight shaft brushcutter, Model 109. The design incorporates all features required for commercial applications. The brushcutter 109 is part of the new

SOLO Multimot Program, a line of outdoor power equipment powered by a single 1½-hp two-cycle engine manufactured by SOLO. No tools are needed to switch the engine to a number of different attachments. By activating a single lever, it is accomplished in seconds.

Standard features of the new brushcutter include a heavy duty straight steel drive shaft, bevel gear drive, AV handles, adjustable cushioned carrying strap and mowing head protection shield. A choice of heavy duty monfilament head, three-knife mowing blade and a circular saw blade are available. The brushcutter weighs only 10 pounds.

Circle No. 173 on Reader Inquiry Card

Ditch Witch offers utility backhoe

Ditch Witch Model A620 utility backhoe mounts to the front of Model 6510

Continued on page 88

On June 25, 1876, George Armstrong Custer ignored his scouts' warnings of many Indians gathered at Little Big Horn. So he rode out with 250 men to "surround" 6,000 Indians. This was a serious error.

Numbers can make all the difference.

It is always a serious error to ignore numbers or talk about them in vague terms. BPA (Business Publication Audit of Circulation, Inc.) guarantees the circulation figures of our member magazines — issue after issue. When you advertise in BPA-audited magazines, you get precise, nonpromotional numbers.

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underground construction equipment. The unit digs to depths of 109 inches, has a 180 degree swing arc and reach of 154 inches. The rear of the vehicle can employ a tranching module, vibratory plow module or combination of both.

Circle No. 174 on Reader Inquiry Card

Toro introduces pop-up sprinkler head

Toro Irrigation has introduced the new Super 600C 2-inch pop-up sprinkler head, designed to meet the heavy demands of commercial irrigation systems.

One of the new head's advantages is a built-in check valve that checks up to 10 feet of elevation, putting a stop to low-head drainage problems.

Three new nozzle sets (3.0, 6.0 and 9.0 GPM) allow for compatible precipitation rates on part-circle and full-circle sprinklers. Maximum radius of 52 feet covers large turf areas and reduces the number of sprinkler heads required. Radius adjustment, up to 25 percent reduction, and adjustable arc part-circles, permit design and installation flexibility.

The Super 600C — heavy-duty version of Toro's field-proven Super 600 sprinkler — operates effectively even in sandy and dirty water. It has a small set screw for its locking cap, providing even greater vandal-resistance. Its sealed-in gear drive assembly assures smooth, quiet operation.

Circle No. 175 on Reader Inquiry Card

Improves soil penetration

Sinak Co.'s Agridyne soil conditioner will enhance the abilities of fertilizers and herbicides by lowering the surface and sub-surface vicinal tension and neutralizing the interfacial tension of water to improve soil penetration. Agridyne is non-toxic, non-phytotoxic, non-caustic, non-flammable and biodegrades within three to six months

Continued on page 91

Cut the Cost of Soil Management...

No other product can give you the results and still cut soil management costs like PENE-TURF Soil Treatment. PENE-TURF costs only about $8 an acre to apply...you can treat **twice** the acreage at less than **half** the cost of similar products!

And what results! Golf course superintendents and professional turf managers across the nation are finding that PENE-TURF improves aeration...helps establish better rooting...eliminates wet **and** dry spots...helps curb erosion...and so much more.

Find out for yourself...write or call today for FREE information about PENE-TURF...the **best** solution for soil management.

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Circle No. 123 on Reader Inquiry Card

The Ditch Witch 350SX, a 35-HP-class lawn plow that's compact enough to go through a 36-inch gate.

Ditch Witch Vibratory Plows . . .

INSTALL PIPE UNDERGROUND *WITHOUT* DIGGING TRENCH!

By reducing installation and restoration time, Ditch Witch vibratory plows can be the fastest, most economical way to install pipe for underground sprinkler systems.

And since you don't have to dig trench, there's none to fill in. Damage to expensive turf is minimal; restoration is quick — usually all that's needed is to drive over the small slit left by the plow's blade.

Ditch Witch has a full line of vibratory plows — from compact models for residential work to bigger machines for golf courses and parks. They all let you put in plastic pipe without trenching, as well as control wire and electrical and communications cable, too.

Find out more from the Ditch Witch dealer in your area. Or write The Charles Machine Works, Inc., P.O. Box 66, Perry, Oklahoma 73077.

Ditch Witch.
Don't settle for less!

Circle No. 117 on Reader Inquiry Card

Ditch Witch®

WHAT'S BETTER THAN SPEED READING?

SPEED LEARNING

(SPEED PLUS COMPREHENSION)

Speed Learning is replacing speed reading. It's easy to learn...lasts a lifetime...applies to everything you read...and is the only accredited course with the option of college or continuing education credits.

Do you have too much to read and too little time to read it? Do you mentally pronounce each word as you read? Do you frequently have to go back and re-read words or whole paragraphs you just finished reading? Do you have trouble concentrating? Do you quickly forget most of what you read?

If you answer "yes" to any of these questions — then here at last is the practical help you've been waiting for. Whether you read for business or pleasure, school or college, you will build exceptional skills from this major breakthrough in effective reading, created by Dr. Russell Stauffer at the University of Delaware.

Not just "speed reading" — but speed reading-thinking-understanding-remembering-and-learning

The new *Speed Learning Program* shows you step-by-proven-step how to increase your reading skill and speed, so you understand more, remember more and use more of everything you read. The typical remark made by the 75,000 slow readers who completed the *Speed Learning Program* was: "Why didn't someone teach me this a long time ago?" They were no longer held back by the lack of skills and poor reading habits. They could read almost as fast as they could think.

What makes Speed Learning so successful?

The new *Speed Learning Program* does not offer you a rehash of the usual eye-exercises, timing devices, costly gadgets you've probably heard about in connection with speed reading courses or even tried and found ineffective.

In just a few spare minutes a day of easy reading and exciting listening, you discover an entirely new way to read and think — a radical departure from anything you have ever seen or heard about. Research shows that reading is 95% *thinking* and only 5% eye movement. Yet most of today's speed reading programs spend their time teaching you rapid eye movement (5% of the problem) and ignore the most important part (95%) *thinking*. In brief, *Speed Learning* gives you what speed reading *can't*.

Imagine the new freedom you'll have when you learn how to dash through all types of reading material *at least* twice as fast as you do now, and with greater comprehension. Think of being able to get on top of the avalanche of newspapers, magazines and correspondence you have to read . . . finishing a stimulating book and retaining facts and details more clearly and with greater accuracy than ever before.

Listen-and-learn at your own pace

This is a practical, easy-to-learn program that will work for you — no matter how slow a reader you think you are now. The *Speed Learning Program* is scientifically planned to get you started quickly . . . to help you in spare minutes a day. It brings you a "teacher-on-cassettes" who guides you, instructs, encourages you, explaining material as you read. Interesting items taken from *Time* Magazine, *Business Week, Wall Street Journal, Family Circle, N.Y. Times* and many others, make the program stimulating, easy and fun . . . and so much more effective.

Executives, students, professional people, men and women in all walks of life from 15 to 70 have benefited from this program. Speed Learning is a fully accredited course . . . costing only 1/5 the price of less effective speed reading classroom courses. Now you can examine the same, easy, practical and proven methods at home . . . in spare time . . . without risking a penny.

Examine Speed Learning FREE for 15 days

You will be thrilled at how quickly this program will begin to develop new thinking and reading skills. After listening to just one cassette and reading the preface you will quickly see how you can achieve increases in both the speed at which you read and in the amount you understand and remember.

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HBJ1-WTT-4/83

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after dilution with water. Available in 4 oz., 1 gallon, and 55 gallon drums, the natural pH surfactant has a dilution rate of 12,000 to 1 with water.
Circle No. 176 on Reader Inquiry Card

Pole pruner has ratchet-cut action

American Standard Company has introduced the Florian pole pruner that has exclusive ratchet-cut action. Optional extenders to 14 feet permit reaching high branches. The pruner has exclusive Ratchet Cut action that does the hard work as the handles are opened and compressed by using a rope. The device comes with Teflon-coated hardened steel blades and a choice of wood or fiberglass handles.
Circle No. 177 on Reader Inquiry Card

Mower provides convenient access

F. D. Kees' 21-inch mower, designed for commercial use, combines rear discharge with minimum deck width for convenient access to hard-to-reach places. Powered by a System 2, 4 hp engine, the mower is equipped with regreasable double ball bearing

wheels. Cutting height adjustments are from 1¼ to 3¾-inches, and special Lo-tone muffler provides quiet operation.
Circle No. 178 on Reader Inquiry Card

Co-molder wiper seal eliminates flow-by

Model 1806 six-inch pop-up sprinkler from Rain Bird Sprinkler Corp. clears ground covers, low scrubs and taller turf grass. The seal cleans the nozzle

Continued on page 92

Scientific Guide To Pest Control Operations

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Dr. G.W. Bennett and
Dr. W.L. Butts

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stem as it comes up, flushes debris away as it retracts, and keeps debris from entering unit at the nozzle/wiper seal interface. Flow-by is arrested at a low 8 psi, a filter screen is under the nozzle, and a full range of nozzle types are available.

Circle No. 179 on Reader Inquiry Card

Skid steer loader for landscaping use

Convenience, power and comfort features are incorporated in the design of the new 4510 skid steer loader according to the Gehl Company, West Bend, Wi.

The 4510 has been engineered so landscapers can make fast attachment changes without leaving the cab. The new Hydro-Lock feature allows use of loader hydraulics to switch from the dirt and rock teeth attachment to the utility bucket to the backhoe or to any other attachment in the versatile, full-line.

Designed to be up and away from dirt and debris, the tilt cylinders are in-

dustrially rated and self-leveling load action — a standard feature unique to Gehl skid loaders designed to keep loads even throughout the lift cycle. The 4510 is SAE-rated at 1150 pounds with the Ford industrial gas engine and at 1225 pounds with the Perkins diesel. Both engines are water cooled.

Maintenance and clean-up are made convenient in the 4510 with a swing-away grill, roll-back overhead guard and quick-clean engine compartment and cab.

Circle No. 180 on Reader Inquiry Card

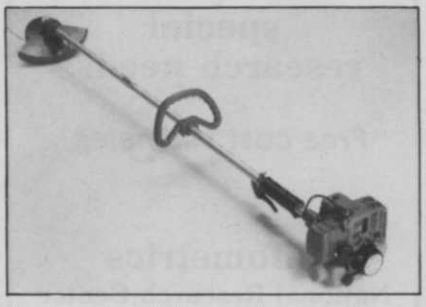
UL approves Stihl chainsaws

Stihl chain saw models have been awarded approval status by Underwriters Laboratories of Northbrook, Ill. Any Stihl product designated as "Listed by Underwriters Laboratories, Inc.," meets the standards of that testing organization. UL approved packages can display the UL symbol on nameplates, packaging, advertising, sales promotion literature and point-of-sale materials.

Circle No. 181 on Reader Inquiry Card

Tanaka markets new brushcutter

Tanaka has introduced a new brushcutter, model TBC-215. This 20cc solid shaft gear-driven unit is designed to fit



the needs of the professional landscape gardener.

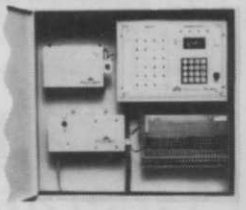
Standard features include transistorized electronic ignition carrying a five-year warranty, safety blade guard, .095 nylon line, automatic feed head, a

Continued on page 100

The Wonderful World of Computers Brings Beauty to Irrigation

Model 39600

Controllers that "Talk" to you... and each other.



Model 39625

Model 39624

Program and Command with only one finger.

You Gotta See it to Believe it

Video Central Controller

Standard typewriter keyboard with Question and Answer programming visible on the screen. Features: 6 separate schedules from 1 to 14 days, automatic independent syringe program, up to 12 irrigation start times per day, 99 irrigation groups for flexible valve control and manual independent valve control. Single finger programming.

Pedestal or Wall Mount Field Controllers

Can be installed indoors or outside and operated as a stand alone controller or with the central controller. Features: 24 stations of 4 modules of 6 stations each, all modules can be operated at once or at different times, any combination of modules can be used to give 6, 12, 18 or 24 station controller(s), 4 separate start times for each module, station time 0 to 59 minutes in one minute increments or 1 to 9 hours in one hour units and separate syringe timing override.

Wall or pedestal mount field controllers can be used as separate and independent controllers and the video central unit added later. Because these units "talk" to each other, programming can take place in the field or from the central location.

Built-in rechargeable batteries for program retention in case of power disruption.

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Mike Erb
Prograss Lawn Service
Field Representative and licensed applicator.

Shadow is a new variety of Chewings type fine fescue developed for improved shade tolerance and resistance to powdery mildew. Breeding for these attributes was a long and tedious job, but the results were better, stronger turf than the old line fescues. Insist on the seed the pros choose for your shade mix.

"The hottest shade tolerant

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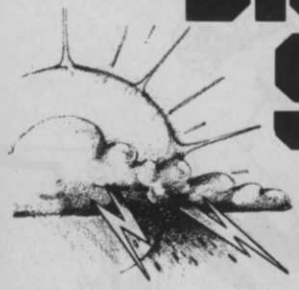

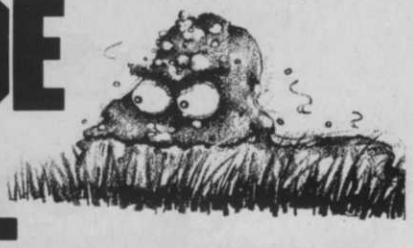

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MEDALIST TURF PRODUCT	MAJOR AREAS OF USE	SPECIAL FEATURES
Athletic Pro Mix	High maintenance athletic turf	Both are well suited for new seeding or overseeding. Fast establishing, excellent traffic tolerance, and rapid recovery. Provides good footing.
Athletic Pro II Mix	Low to moderate maintenance athletic turf.	
Boulevard Mix	Any area with high pH (roadsides, sidewalks, boulevards, beachfronts, etc.)	Contains both "Fults" *Puccinellia distans* and Dawson red fescue which thrive on high saline or alkaline soils. Performs at low to high fertility levels.
Landscape Pro Mix	School grounds, cemeteries, golf course roughs, lawns	Fast establishing. Adapts to broad range of conditions and management levels. Low to moderate fertility requirements.
Overseeder II Mix	Fairways, tees, athletic fields	Fast establishing, traffic tolerant, disease resistant, penetrates compacted soil.
Overseeder III Mix (Formerly Medalist North Mix)	Fairways, tees, cart paths, wear areas	Long term quality in high traffic areas. Clean mowing and disease tolerant.
Premium Sod Blend	Commercial sod producers	Fast establishing, exceptional dark green color, shade tolerant, superior disease resistance.
Special Park Mix	Parks, commercial developments, lawns	Low fertility tolerance, shade tolerant, adapts to wide range of soil types.

Ask your Northrup King distributor about the Medalist Turf Products for your needs. Or write Northrup King Medalist Turf Products, P.O. Box 959, Minneapolis, MN 55440.

MEDALIST TURF PRODUCTS

Circle No. 138 on Reader Inquiry Card

"Oh, no. Mrs. Netzloff had another car break down on her."

You know the feeling: your fleet has problems and certain members seem to find all of them. When Mrs. Netzloff or anyone else goes through this out on your course, it reflects on the people in charge — even if the problem is only a worn-out or badly designed car. So what can the people in charge do?

For starters, spend a few minutes reading some good news on the car front.

"Mrs. Netzloff" is a purely fictitious character. Any association with real persons, living or dead, is entirely coincidental and unintended.

How Columbia keeps Mrs. Netzloff on course.

Columbia looks at cars the way *you* look at cars.
We know you don't judge a car on the way it looks sitting serenely under a palm tree. To a pro or a course manager, a car looks good when it comes cruising back after 18 long holes — ready for another round. So we make Columbia cars for the toughest demands of the course — to perform smoothly, efficiently, reliably. Over the long ride.

We build cars for the way you really use them.
We start with heavy-duty steel frames. We build in longevity with reinforced fiberglass bodies that resist corrosion and withstand greater impact. The convenient tilt-up body exposes the entire power plant and drive-train assembly, so routine service and cleaning is more than routinely easy. Parts are easily replaced; some, like the drive belt, can be replaced without a single tool.

Gas cars feature a new 250cc engine — the only one built in America *and* the only one designed specifically for golf car use. A redesigned fan shroud, tuned exhaust system, and a reduced rpm at full vehicle speed mean lower operating temperatures and longer engine life.

Electric cars feature Columbia's exclusive Master Glide™ electrical system. A special two-circuit configuration utilizes half-power at low speeds, full power at high speeds. Deep cycling is minimized and less charging time is required, with more rounds per charge.

It all adds up to fewer problems, greater pay-out.

We're standing behind our cars.
Columbia has more up front: gas and electric, three-wheel and four-wheel models — so we have the right car for each course, not the best compromise. And we have more behind it: the best warranty in the business. On gas cars, two years on the cylinder, piston, cylinder head, crankcase, crankshaft assembly, and bearings. On electric cars, two years on the solenoids, resistor, time delay, diodes, and speed switch.

We wouldn't back them this well if we didn't know they were built for the long ride.

And we're standing behind our customers.
For Columbia, reliable performance isn't just a mechanical issue. We're designing cars and support programs that maximize player satisfaction *and* course income. All backed by the largest dealer network in the industry. So you can get the parts and service you need, *when* you need it.

We're sure you'll respond to the comfort, craftsmanship, and profitability of the Columbia idea — sooner or later. Because we're here for the long ride.

For information about a free demonstration offer, please contact your local Columbia dealer. For complete technical information call 1 800 222-4653 or write: Columbia Car Corporation, P.O. Box 3069, Madison, WI 53704

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Circle No. 109 on Reader Inquiry Card

four-tooth blade and rubber isolated engine mount.

Circle No. 182 on Reader Inquiry Card

New sod exclusively for Southern California

Southland Sod Farms announces a water-conserving turfgrass called Marathon Hybrid Tall Fescue.

Werner Gramckow, president and founder of Southland Sod Farms explains, "For years, the turf industry has sought to fill the need for an attractive grass variety that can flourish in the hot, dry weather of Southern California.

"Toward this end, in 1981, we began testing a number of hybrid tall fescues to determine their suitability for this region. Limited test quantities were grown and installed in actual landscapes in Camarillo, Simi Valley, Chino, Lancaster, Sherman Oaks, Irvine, Anaheim, Newport Beach and San Diego.

"The results are now in and we are very excited to announce that a 100 percent pure hybrid tall fescue sod, which we named Marathon, is now available in large production quantities in Southern California. We believe that Marathon represents the most dramatic breakthrough the turf industry has seen in many years.

On the surface, Marathon looks similar to popular bluegrass varieties. But, the growers say, the difference in performance between these two varieties is significant.

Because Southern California is really too hot during the summer for bluegrass mixes and too cool in the winter for bermudas, Marathon Hybrid Tall Fescue is a possible solution. Marathon stays green year-round without the rust disease found with blue grass varieties and it doesn't have winter dormancy or the thatch build-up problem of the Bermudas.

The manufacturer lists three characteristics that make Marathon superior to any other sod variety now available in Southern California:

-because of Southern California's limited water supply, it conserved water.

-its efficient root system draws moisture and nutrients up from up to six times the depth of shallow-rooted bluegrass varieties.

-Marathon is highly disease resistant, durable and heat resistant. It requires less fertilizer than other lawn varieties.

Marathon Sod is in full production at Southland Sod Farms located in Camarillo, CA. It is available now from Southern California nurseries and licensed landscape contractors.

Circle No. 183 on Reader Inquiry Card

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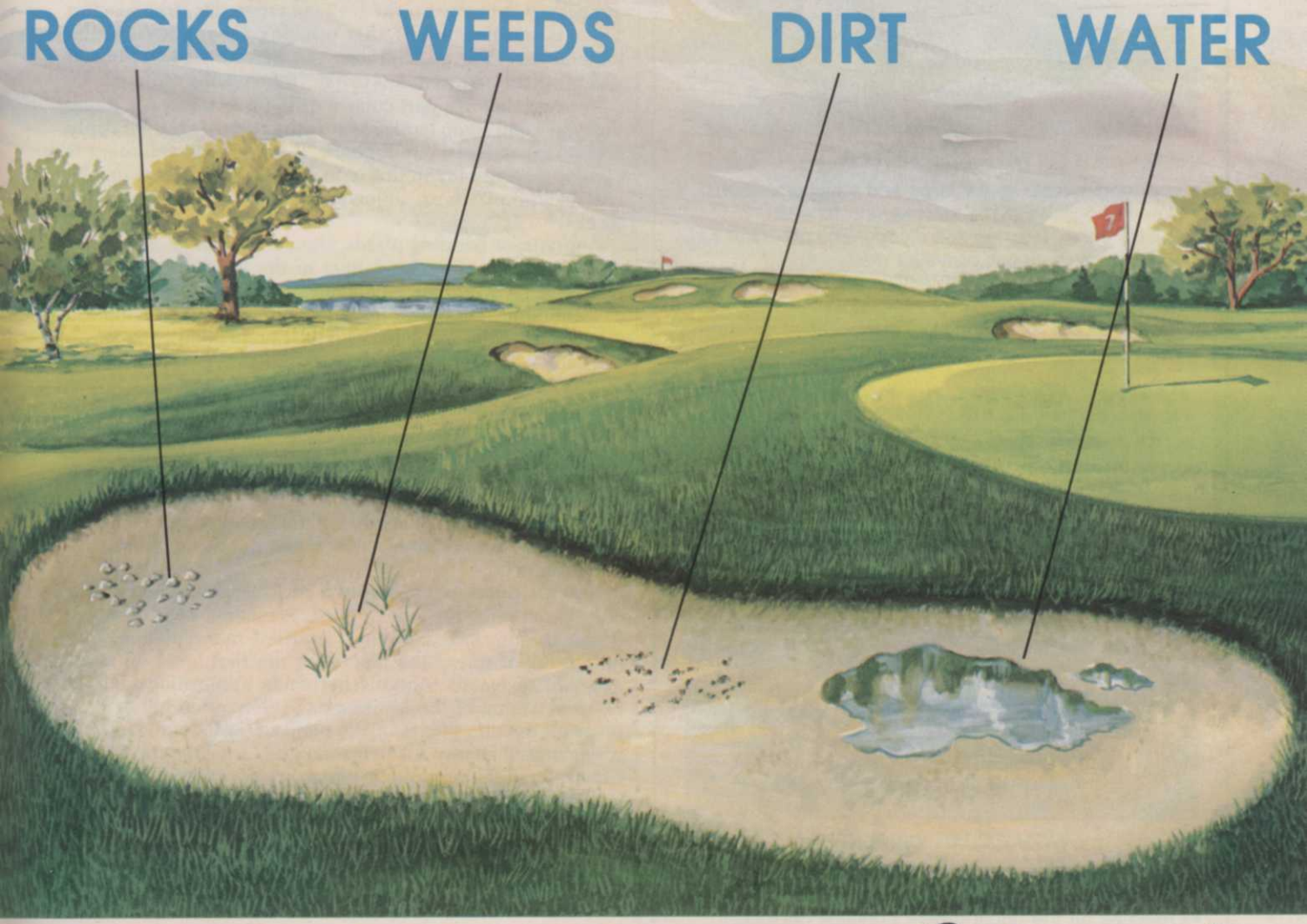
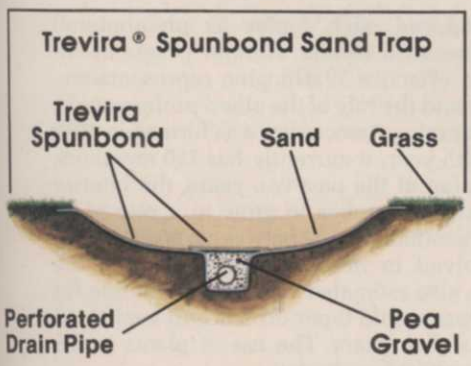
Circle No. 133 on Reader Inquiry Card

A BLANKET SOLUTION FOR YOUR BUNKER PROBLEMS



TREVIRA® SPUNBOND from Warren's®



Trevira® Spunbond is a registered trademark of Hoechst AG. Warren's is an authorized distributor of Trevira® Spunbond.

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This revolutionary new geotextile fabric can be your "Security Blanket" against today's ever increasing course maintenance costs! A simple installation of Trevira® Spunbond as shown here will effectively eliminate such bunker nightmares as dirt...rocks...and weeds while allowing complete water drainage ...no more wading pools in your sand traps! And, Trevira® Spunbond will stand the test of time because it's impervious to soil chemicals. When properly installed, mechanical sand rakes and even those deadly deep digging sand wedges will not affect it! You'll also find Trevira® Spunbond the ideal and economical solution for such applications as reinforcing cart paths, erosion control, drainage, greens liners, and much more.

Available in easy-to-use rolls, Trevira® Spunbond is produced in weights ranging from 4.5 to 16 oz/yd². For applications literature on our "Security Blanket" and dealer locations, call or write Warren's Seed-Special Products Division.

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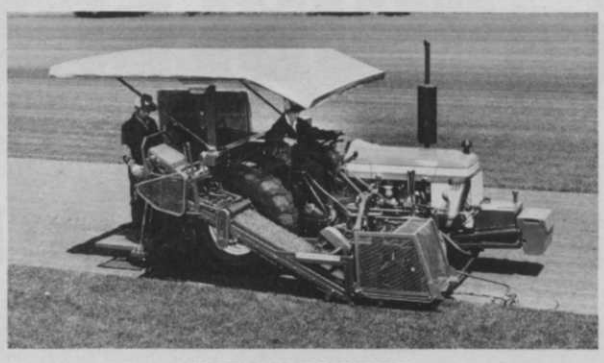
THE NEW BROUWER 1500 Sod Harvester Does It All



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Circle No. 105 on Reader Inquiry Card

LANDSCAPE LOG *from page 22*

shrubs. With either B&B or container grown trees, the root system has not been disturbed to the point where transplanting success should be dramatically reduced. It still must be stressed, though, that early planting during April will, except for pines, result in an even higher percentage of transplant success.

By early May, turf has started to grow aggressively. With that period of active growth, lawn care should take precedence. Care and continuous **mowing,** that is never allowing the grass to get taller than ⅓ the height you intend to set the mower e.g. mowing height 2½" cut when the grass reaches 3¼", is paramount. If this mowing frequency can be maintained, then all clippings can be returned to the soil and fertilizer requirements can be dramatically reduced.

In areas that are particularly difficult to mow, e.g. along highways and steep banks, May is the prime month to **apply growth retardants,** e.g. Embark. If the growth retardant is applied during May in this type of area, mowing frequency will be minimized, e.g. in low maintenance areas for up to 8 weeks.

Annuals, or **bedding plants,** should be planted as soon as the soil warms after the danger of the last frost, e.g. frost-free date for Midland, Michigan is May 25. Annuals, such as geraniums, begonias, impatiens, marigolds, provide 4-6 months of continuous color with little or no maintenance.

There was a great rise in popularity of bedding plants during the '60's and '70's. The result of current breeding is disease-free, reasonably low maintenance varieties of nicotiana, marigolds, impatiens, begonias, annual phlox, or, of course, seed geraniums. The color and texture afforded by bedding plants last for such a long period of time that they should be high priority.

Generally speaking, bedding plants require more maintenance than simple ground covers but not as much maintenance as turf.

Aquatic pond management is an emerging science with only broad guidelines developed. Presently, depth control, fringe or interface plantings, nutrient manipulation, and harvesting of unwanted plants are the first levels of management of weeds. Aquatic herbicide applications should be used as one of the last resorts as they often kill or suppress all aquatic plants in the pond as well as making the water unsatisfactory for irrigation and/or terrestrial plants. Generally speaking, aquatic plants are not controlled chemically until the water temperature reaches 65°F. This high water temperature exists after some growth has already commenced. One should carefully assess the total effects of herbicide application to be sure that one is not creating a new problem. **WTT**

LANDSCAPE UPDATE *from page 16*

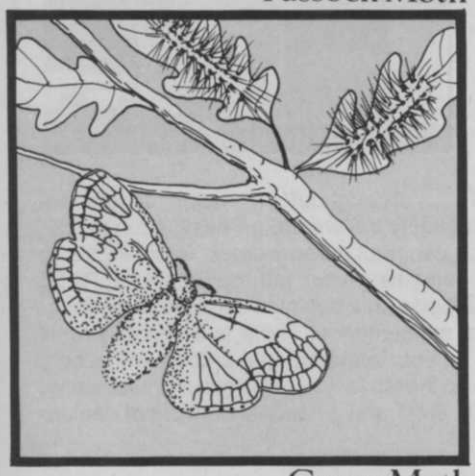
Participants considered such topics as phenomenal growth rate, chief executive officer seminar programs, financial management, effective Washington representation, the consumer market and the role of the allied professional.

The Interior Plantscaping Association was formed in 1979 and, beginning its fifth year, it currently has 750 members. Even with the recession of the past two years, the interior plantscaping profession continues to grow at a rate of 15 percent annually. It is estimated that between 5,000 to 10,000 businesses are involved in interior plantscaping in the United States. It was also estimated that the growth rate for plantscaping businesses would taper off to a still healthy 10 percent over the next five years. The use of plants in the commercial environment is here to stay.

continued on page 104

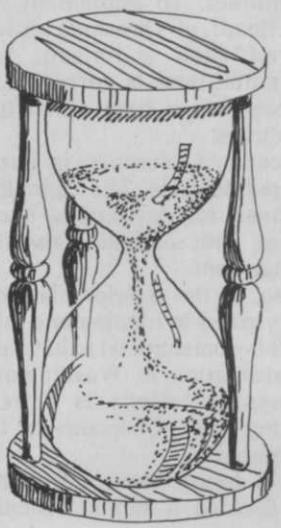
Tent Caterpillars

Tussock Moth



Gypsy Moth

CONTROL SHADE TREE INSECT PESTS



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Atrinal systemic growth regulator inhibits apical bud growth, promoting lateral branching for lusher, fuller plants that keep their shape. Atrinal can also be used to suppress flowering and fruit set of ornamental olives and certain other species. And application is safe and easy.

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Atrinal can also be used for nursery and greenhouse crops.

Circle No. 131 on Reader Inquiry Card

The role of the Association was given close scrutiny. Education is the primary concern of plantscapers and the Association that represents them. The assembly found a Chief Executive Officer seminar series should be implemented in which experienced industry professionals will address sophisticated financial management topics. Educational ties should be strengthened with allied trades, growers and suppliers through liaison committees. To implement this, the IPA Board of Directors recently approved such a liaison Advisory Committee and is currently seeking representatives from allied trades to participate.

Second to education in importance was publications. The committee saw the need for developing handbooks dealing with marketing and financial management.

Also, as the interior plantscape industry grows in number and influence, it will become crucial to have effective representation in Washington. Government relations is a new, but growing, area of concern for IPA and its members.

As a fourth area of responsibility, IPA decided it should concern itself with the establishment of professional credibility through accreditation. To this end, the Leaders of the Industry Assembly support an expanded program of certification through the National Council of Interior Horticultural Certification program (NCIHC).

As a final area of responsibility, the Association should function as a reference source, liaison with allied trades and information bank for each IPA member.

Marketing and public relations zeroed in on the two major marketplaces: commercial and residential. The outcome of the lengthy discussion was that optimal awareness still lies with the individual member firm to develop aggressive, high-performance sales programs as follow-up to the support they receive from the I.P.A.

Under bidding and specifying, education, or the lack of it, was pinpointed as a crucial concern in the bidding process. The Assembly saw a need for educating design professionals, those who normally write specifications, as to the availability of a product, procedural steps, mechanical requirements from the plantscaper's point of view and general horticultural requirements. **WTT**

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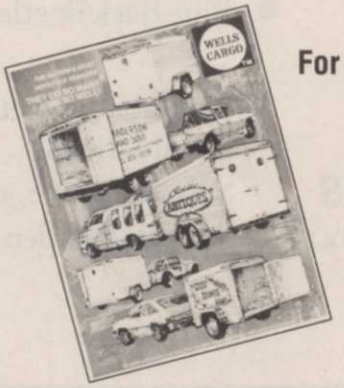

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Landscape architects all over the country are finding their roots in the Enkaturf® System.

❶ **Golf courses** all over the country are using the Enkaturf® System for soil erosion problems, entrance ways to cart paths, tees, pond stabilization and for the construction of flood plains. Roots spread and grow through the Enkaturf System, making the turf more durable. In fact, eleven of the top forty golf courses are protecting their turf with the Enkaturf System.

❷ **Football fields,** all playing fields are protected from tearing and divots with the Enkaturf System. It's structured to keep turf grounded and resilient even in heavy traffic areas. So players are less apt to become injured. The System also reduces compaction while increasing drainage capacity.

❸ **Soccer fields** in Europe have been reaping the benefits from the Enkaturf System for the last 16 years. The aesthetic quality of a natural playing field is enhanced with the Enkaturf System.

❹ **Airfield** architects have also discovered the effectiveness of the Enkaturf System in airstrips. The Enkaturf System is used to reinforce grass landing strips to provide a smooth shock-absorbing surface. A smooth landing. Airfields with paved runways use the Enkaturf System to protect adjacent grass areas.

Zoos and parking lots also use the Enkaturf System to protect their grass areas. The System gives sod structural strength. No other medium, natural or man-made, can achieve this.

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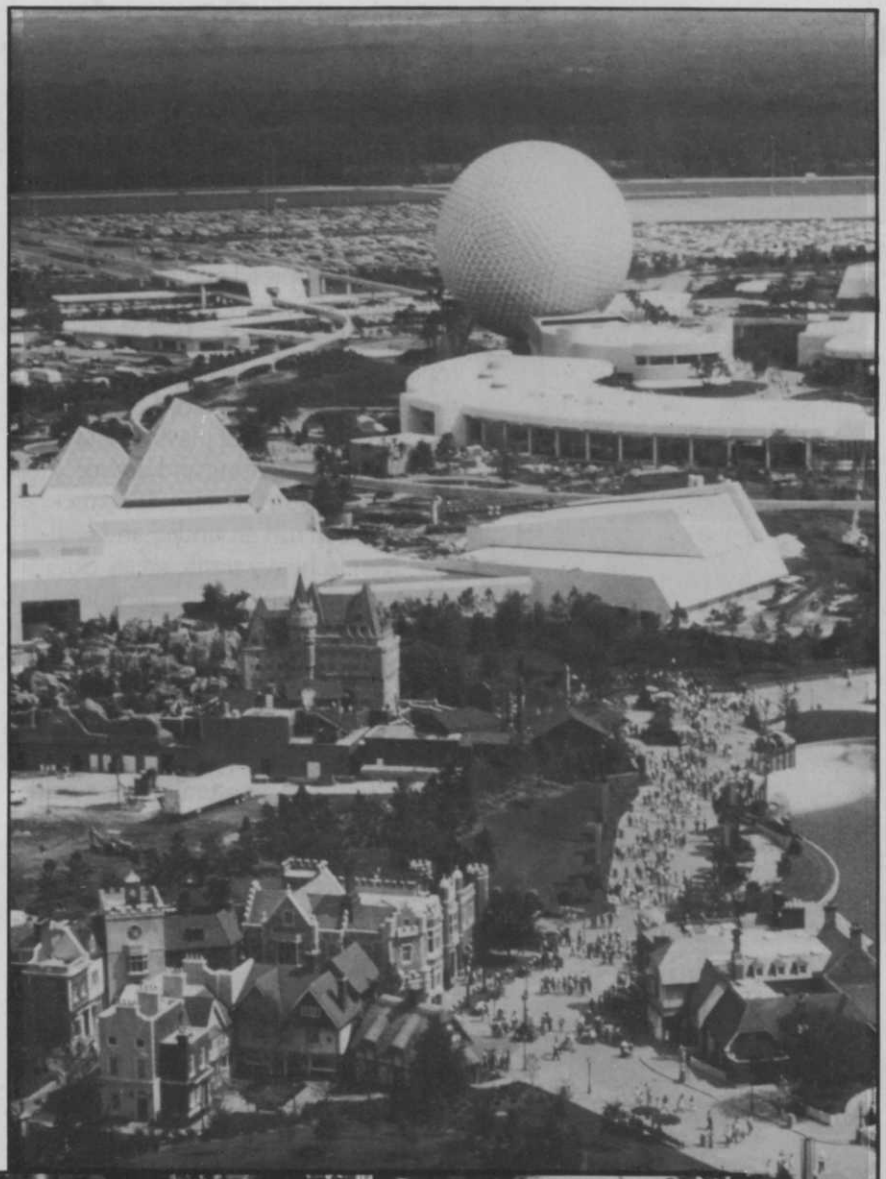
EPCOT *from page 26*



Epcot's 260 developed acres *include plants from all parts of the country.* **Crew plants annuals** *four times each year in 165 beds ranging in size from 50 to 20,000 square feet.*

Most irrigation is done between 7:00 pm and 1:00 am. Under normal conditions, 5,500 gallons per minute is used. Water is supplied by five wells.

Hanging plants are watered by small tubes which drip as needed.

The irrigation lines and the Valcon control system cost $1.7 million to install.

Insects and plant diseases have to be watched carefully. Oftanol is used for control of mole crickets, followed by spot treatments with diazinon. Sevin and Dursban are used for sod webworm and armyworm control.

Hemlock, common in Canada, wouldn't make it in Florida, so landscape architect Tony Virginia substituted a Himalayan cedar which looks like hemlock.

Tree and shrub insects, such as mites, hard and soft scale, and lepidoptera, are kept under control with Orthene, diazinon, Kelthane, Vendex and summer oil.

Tree diseases, such as leafspot and dieback, are treated with copper sulphate or Fore. Root rot is treated with benomyl, Banrot, Subdue, and Truban.

Treflan, balan, and Ronstar are used in preemergence weed control. Roundup is used for spot control.

"Since all the horticultural work is done with our staff, we have a broad range of equipment," McCarty said. "We have two Ford tractors, Mott Interstater mowers, two Kut-Kwik rotaries for slopes and overpasses, four Toro Groundsmasters, and eight Cushman Trucksters. The landscape crew also has seven half-ton trucks and a number of sprayers."

As Epcot Center expands from 260 acres to 500 acres, the same high level of landscaping will be applied. Without landscaping, Epcot Center wouldn't be the attraction it is. Landscaping and landscape maintenance are a vital part of the Disney "magic". **WTT**

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SENCOR is formulated as a dry flowable herbicide for easy mixing and application with standard spraying equipment. SENCOR works two ways to effectively control goosegrass in bermudagrass—by contact activity and root uptake.

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